

**Revision A:**

- MXZ-2B20NA-  has been added.

# OUTDOOR UNIT SERVICE MANUAL



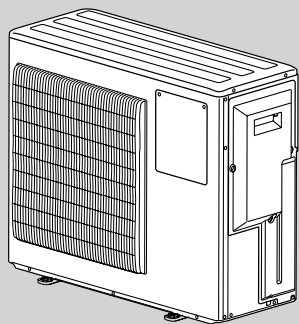
**No. OBH560**  
**REVISED EDITION-A**

## Models

**MXZ-2B20NA**

**MXZ-2B20NA - **

Indoor unit service manual  
MSZ-A-NA Series (OB450)  
MSZ-FD-NA Series (OBH497)  
MSZ-FE-NA Series (OBH542)  
MSZ-GE-NA Series (OBH548)  
SEZ-KD-NA.TH Series



**MXZ-2B20NA**

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## INDOOR UNITS COMBINATION SHEETS



The Slim Line.  
From Mitsubishi Electric.

**Mr. SLIM** <sup>TM</sup>

## Revision A:

- MXZ-2B20NA- <sup>1</sup> has been added.

# 1

## TECHNICAL CHANGES

### MXZ-2B20NA

New model.

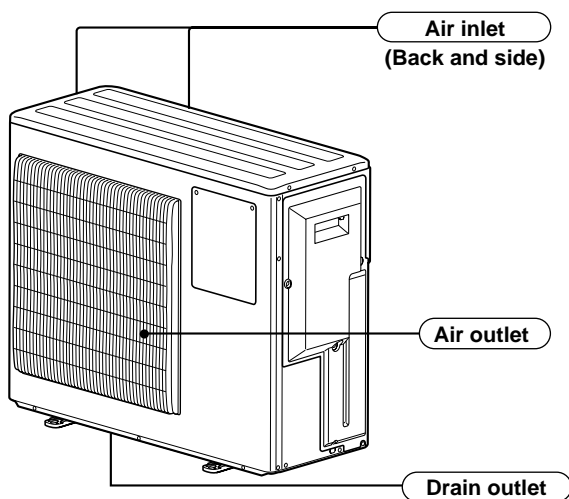
### MXZ-2B20NA → MXZ-2B20NA - <sup>1</sup>

1. Outdoor fan motor has been changed.
2. Outdoor electronic control P.C. board has been changed.
3. LEV coil has been changed.

# 2

## PART NAMES AND FUNCTIONS

### MXZ-2B20NA MXZ-2B20NA - <sup>1</sup>



Item		Outdoor model	MXZ-2B20NA MXZ-2B20NA -□1	
		Indoor type	Wall (09+09)	Duct (09+12)
Capacity	Cooling ※1	Btu/h	18,000	20,000
	Heating 47 ※1	Btu/h	22,000	22,000
	Heating 17 ※2	Btu/h	12,500	12,500
Power consumption	Cooling ※1	W	1,440	2,190
	Heating 47 ※1	W	1,650	1,780
	Heating 17 ※2	W	1,350	1,430
EER	Cooling		12.5	9.1
SEER	Cooling		18.0	15.5
HSPF IV (V)	Heating		8.9 (7.0)	8.5 (6.9)
COP	Heating		3.91	3.62
External finish			Munsell 3.0Y 7.8/1.1	
Power supply		V, phase, Hz	208/230, 1, 60	
Max. fuse size (time delay)		A	20	
Min. circuit ampacity		A	15	
Fan motor		F.L.A	0.96	
Compressor	Model		SNB130FQBH1	
	Winding resistance (at 68°F) Ω		U-V 0.98 V-W 0.98 W-U 0.98	
	R.L.A		10.1	
	L.R.A		15	
Refrigerant control			LEV	
Sound level		dB(A)	49/51	
Defrost method			Reverse cycle	
Dimensions	W	in.	33-1/16	
	D	in.	13	
	H	in.	27-15/16	
Weight		lb.	130	
Remote controller			Wireless type	
Control voltage (by built-in transformer)			12-24 V DC	
Refrigerant piping			Not supplied (optional parts)	
Valve size	Liquid	in.	1/4	
	Gas	in.	A,B: 3/8	
Connection method	Indoor		Flared	
	Outdoor		Flared	
Refrigerant charge (R410A)		lb.	5 lb. 15 oz.	
Refrigeration oil (Model)		oz.	23.7 (NEO22)	

NOTE : Test conditions are based on ARI 210/240.

Unit: °F

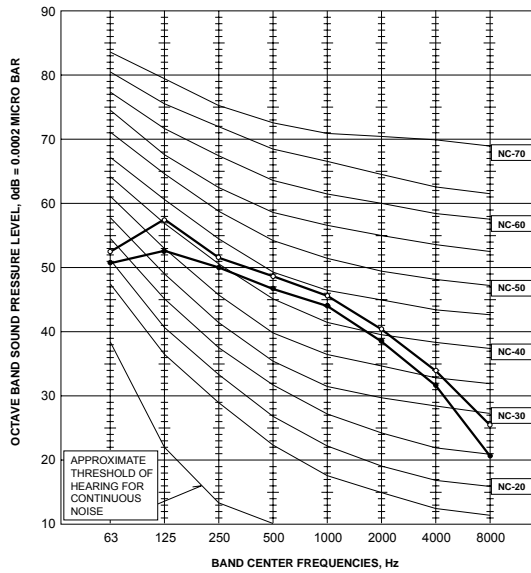
Mode	Test	Indoor air condition		Outdoor air condition	
		Dry bulb	Wet bulb	Dry bulb	Wet bulb
Cooling	※1: "A" Cooling steady state at rated compressor speed	80	67	95	(75)
	"B-2" Cooling steady state at rated compressor speed	80	67	82	(65)
	"B-1" Cooling steady state at minimum compressor speed	80	67	82	(65)
	Low ambient cooling steady state at minimum compressor speed	80	67	67	(53.5)
	Intermediate cooling steady state at intermediate compressor speed	80	67	87	(69)
Heating	※1: Standard rating-heating at rated compressor speed	70	60	47	43
	※2: Low temperature heating at maximum compressor speed	70	60	17	15
	Maximum temperature heating at minimum compressor speed	70	60	62	56.5
	High temperature heating at minimum compressor speed	70	60	47	43
	Frost accumulation at rated compressor speed	70	60	35	33
	Frost accumulation at intermediate compressor speed	70	60	35	33

# NOISE CRITERIA CURVE

**MXZ-2B20NA**

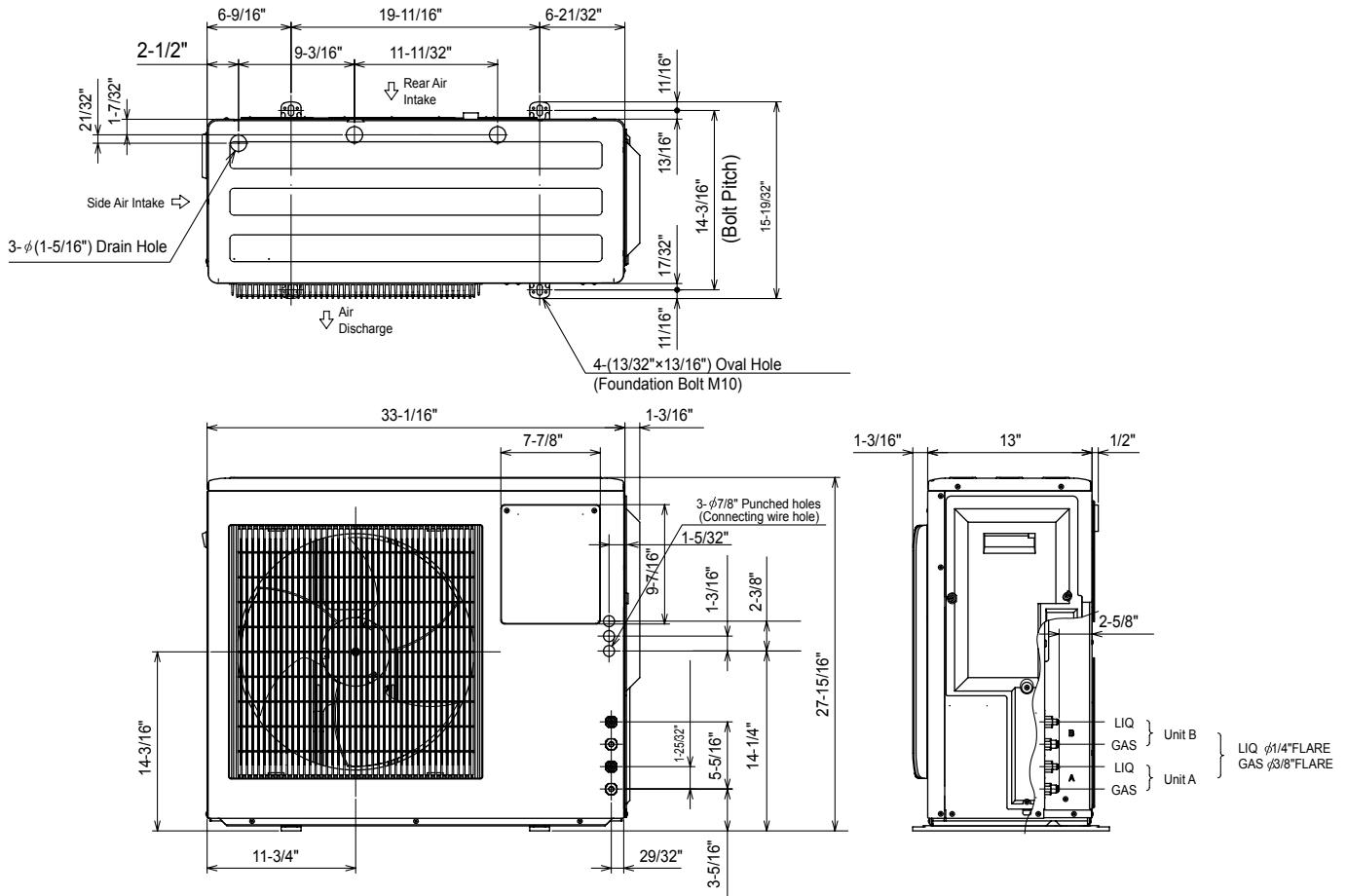
**MXZ-2B20NA - 1**

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High	Cooling	49	●—●
High	Heating	51	○—○



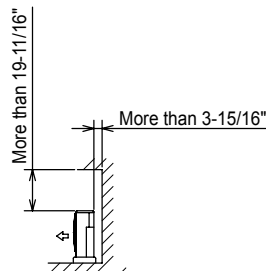
## MXZ-2B20NA MXZ-2B20NA - 1

Unit: inch

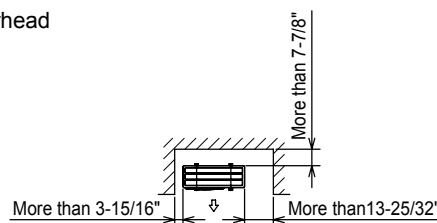


## 1. Installation space

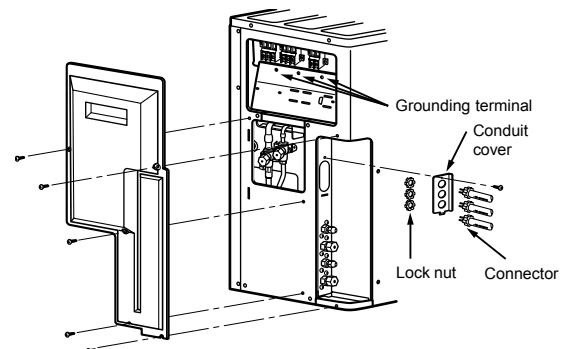
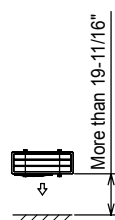
Note : Leave front and both sides clearance fully.



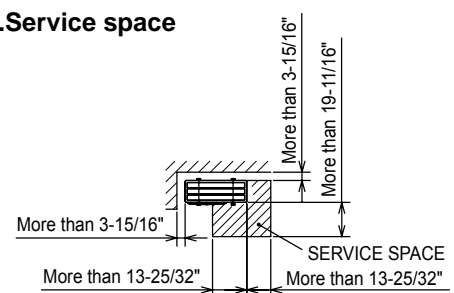
Note : Leave front and overhead clearance fully.



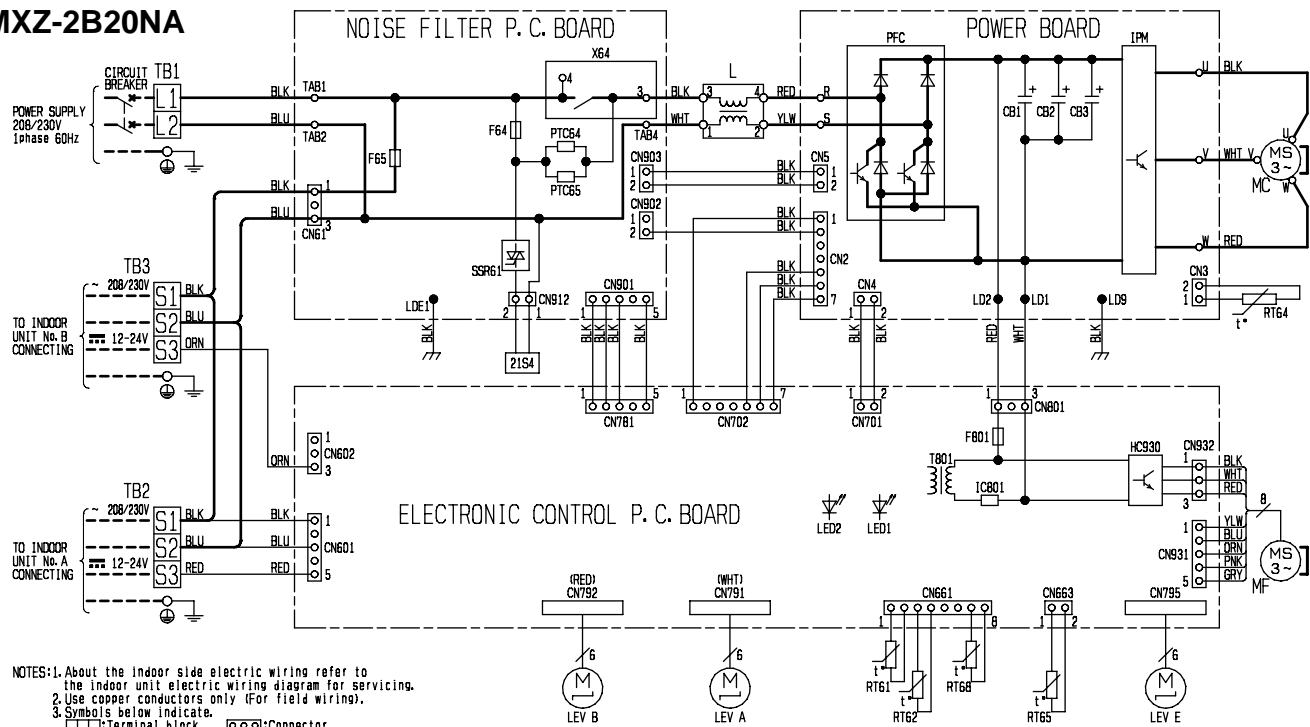
Note : Leave rear, overhead and both sides clearance fully.



## 2. Service space

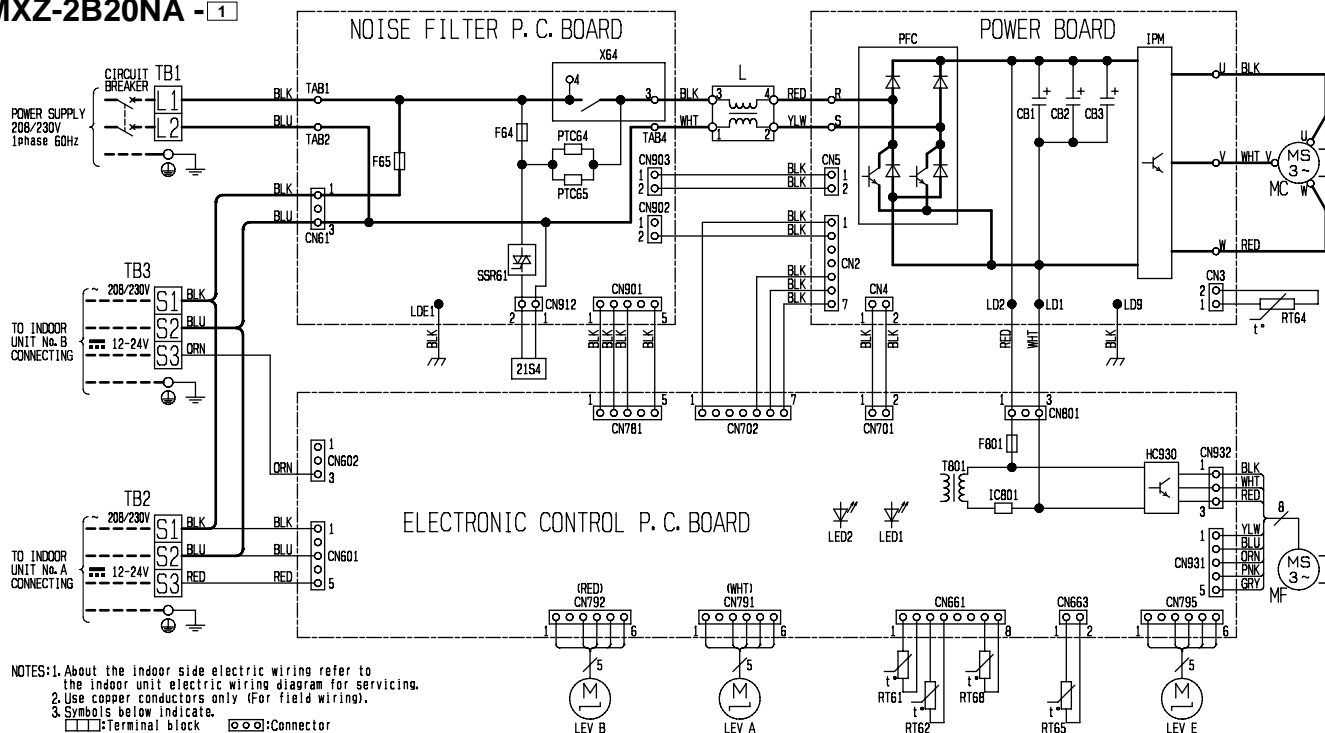


## MXZ-2B20NA



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CB1~3	SMOOTHING CAPACITOR	IPM	POWER MODULE	MF	FAN MOTOR	RT65	AMBIENT TEMP. THERMISTOR	21S4	REVERSING VALVE SOLENOID COIL
F64	FUSE (T2AL250V)	L	REACTOR	PFC	POWER FACTOR CONTROLLER	RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR		
F65	FUSE (T6.3AL250V)	LED1, 2	LED	PTC64, 65	CIRCUIT PROTECTION	SSR61	SOLENOID COIL RELAY		
F801	FUSE (T3.15AL250V)	LEV A, B	EXPANSION VALVE	RT61	DEFROST THERMISTOR	T801	TRANSFORMER		
HC930	POWER MODULE	LEV E	EXPANSION VALVE	RT62	DISCHARGE TEMP. THERMISTOR	TB1~3	TERMINAL BLOCK		
IC801	POWER DEVICE	MC	COMPRESSOR	RT64	FIN TEMP. THERMISTOR	X64	RELAY		

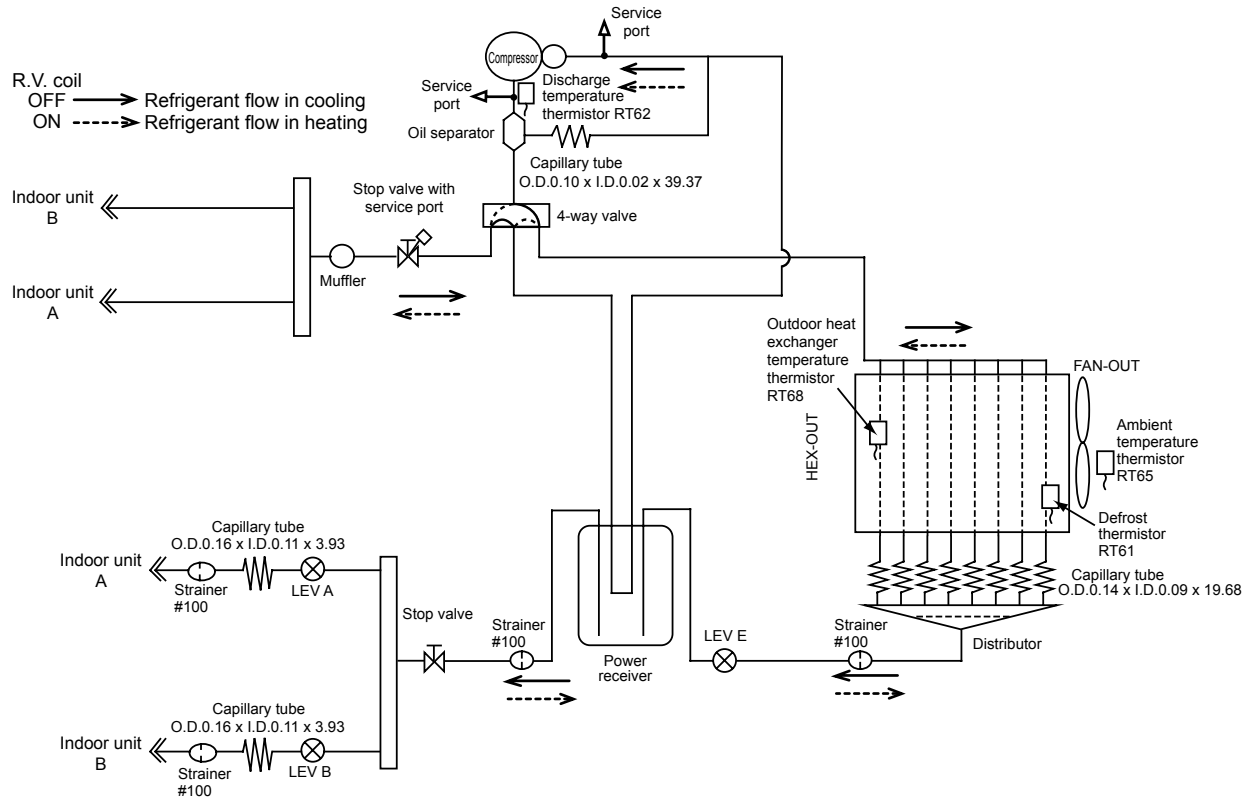
## MXZ-2B20NA - 1



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CB1~3	SMOOTHING CAPACITOR	IPM	POWER MODULE	MF	FAN MOTOR	RT65	AMBIENT TEMP. THERMISTOR	21S4	REVERSING VALVE SOLENOID COIL
F64	FUSE (T2AL250V)	L	REACTOR	PFC	POWER FACTOR CONTROLLER	RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR		
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F801	FUSE (T3.15AL250V)	LEV A, B	EXPANSION VALVE	RT61	DEFROST THERMISTOR	T801	TRANSFORMER		
HC930	POWER MODULE	LEV E	EXPANSION VALVE	RT62	DISCHARGE TEMP. THERMISTOR	TB1~3	TERMINAL BLOCK		
IC801	POWER DEVICE	MC	COMPRESSOR	RT64	FIN TEMP. THERMISTOR	X64	RELAY		

MXZ-2B20NA MXZ-2B20NA - 1

Unit: mm



## Operating Range MXZ-2B20NA MXZ-2B20NA - [1]

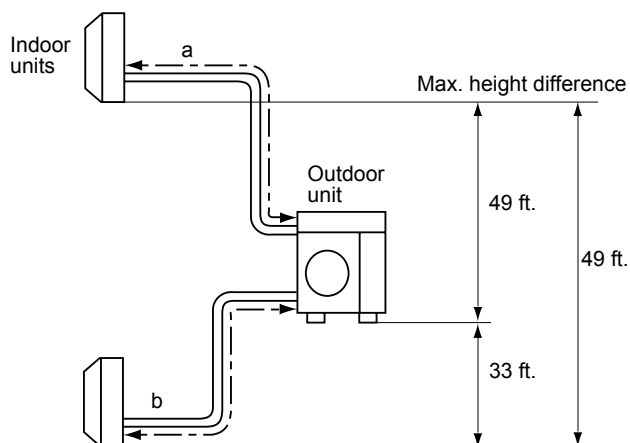
		Indoor intake air temperature	Outdoor intake air temperature
Cooling	Maximum	95°FDB, 71°FWB	115°FDB
	Minimum	67°FDB, 57°FWB	14°FDB
Heating	Maximum	80°FDB, 67°FWB	75°FDB, 65°FWB
	Minimum	70°FDB, 60°FWB	6°FDB, 5°FWB

## MAX. REFRIGERANT PIPING LENGTH & PIPE SIZE SELECTION

### MXZ-2B20NA MXZ-2B20NA - [1]

Piping length each indoor unit (a, b)	82 ft. MAX.
Total piping length (a+b)	164 ft. MAX.
Bending point for each unit	25 MAX.
Total bending point	60 MAX.

\*It does not matter which unit is higher.



- Refrigerant pipe diameter is different according to indoor unit to be connected. When using extension pipes, refer to the tables below.
- When diameter of refrigerant pipe is different from that of outdoor unit union, use optional Different-diameter pipe.  
For further information on Different-diameter pipe.

Unit: inch

Indoor unit class	Extension pipe diameter	
09 or less	Liquid	1/4
	Gas	3/8
12	Liquid	1/4
	Gas	3/8
15	Liquid	1/4
	Gas	1/2

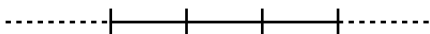
Outdoor unit union diameter		
For		
Indoor unit A	Liquid	1/4
	Gas	3/8
Indoor unit B	Liquid	1/4
	Gas	3/8



Model			MXZ-2B20NA MXZ-2B20NA -1				
Indoor type			Wall (09+09)		Duct (09+12)		
Item		Unit	Cooling	Heating	Cooling	Heating	
Total	Capacity	But/h	18,000	22,000	20,000	22,000	
	SHF	—	—	—	—	—	
	Input	kW	1.44	1.65	2.19	1.78	
Electrical circuit	Power supply (V,phase,Hz)		208/230, 1, 60				
	Input	kW	1.396	1.604	2.06	1.69	
	Comp. current (208/230V)		A	6.08/5.87	7.25/6.80	9.81/8.87	7.98/7.22
	Fan motor current		A	0.43/0.39	0.43/0.39	0.43/0.39	0.43/0.39
Refrigerant circuit	Condensing pressure		PSIG	411	319	417	350
	Suction pressure		PSIG	141	102	130	101
	Discharge temperature		°F	169	154	174	172
	Condensing temperature		°F	114	100	120	104
	Suction temperature		°F	71	46	65	46
	Comp. shell bottom temp.		°F	163	149	185	167
	Ref. pipe length [Total pipe length for multi-system]		ft	82 [164]			
	Refrigerant charge (R410A)		—	5 lb. 15 oz.			
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47
		WB	°F	—	43	—	43
	Fan speed		rpm	650	700	650	700
	Airflow		CFM	1485	1640	1485	1640

## 8-1. OPERATING RANGE

### (1) POWER SUPPLY

	Model	Rating	Guaranteed Voltage
Outdoor unit	<b>MXZ-2B20NA</b> <b>MXZ-2B20NA-<sup>1</sup></b>	208/230 V 60 Hz 1 $\phi$	Min. 198 V 208 V 230 V Max. 253 V 

## (2) OPERATION

Function	Condition \ Intake air temperature	Indoor		Outdoor	
		DB (°F)	WB (°F)	DB (°F)	WB (°F)
Cooling	"A" Cooling steady state at rated compressor speed	80	67	95	(75)
	"B-2" Cooling steady state at rated compressor speed	80	67	82	(65)
	"B-1" Cooling steady state at minimum compressor speed	80	67	82	(65)
	Low ambient cooling steady state at minimum compressor speed	80	67	67	(53.5)
	Intermediate cooling steady state at intermediate compressor speed	80	67	87	(69)
Heating	Standard rating-heating at rated compressor speed	70	60	47	43
	Low temperature heating at rated compressor speed	70	60	17	15
	Max. temperature heating at minimum compressor speed	70	60	62	56.5
	High temperature heating at minimum compressor speed	70	60	47	43
	Frost accumulation at rated compressor speed	70	60	35	33
	Frost accumulation at intermediate compressor speed	70	60	35	33

## MXZ-2B20NA MXZ-2B20NA - 1

The standard specifications apply only to the operation of the air conditioner under normal conditions.

Since operating conditions vary according to the areas where these units are installed, the following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

### (1) GUARANTEED VOLTAGE

198 ~ 253 V 60 Hz

### (2) AIR FLOW

Air flow should be set at MAX.

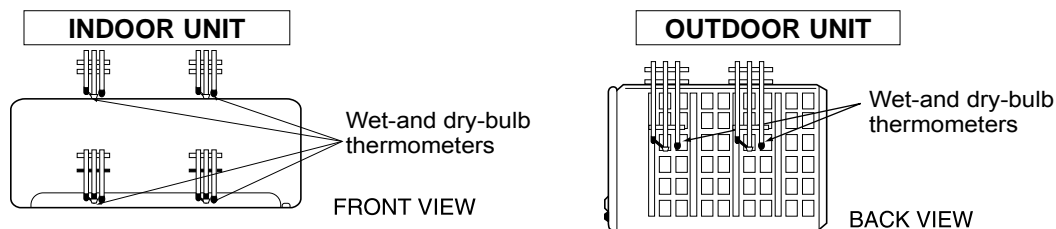
### (3) MAIN READINGS

(1) Indoor intake air wet-bulb temperature :	°FWB	} Cooling
(2) Indoor outlet air wet-bulb temperature :	°FWB	
(3) Outdoor intake air dry-bulb temperature :	°FDB	
(4) Total input :	W	
(5) Indoor intake air dry-bulb temperature :	°FDB	} Heating
(6) Outdoor intake air wet-bulb temperature :	°FWB	
(7) Total input :	W	

Indoor air wet/dry-bulb temperature difference on the left side of the following chart shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

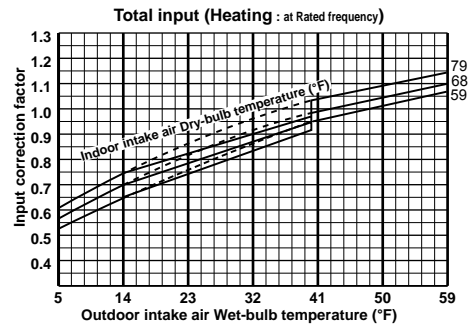
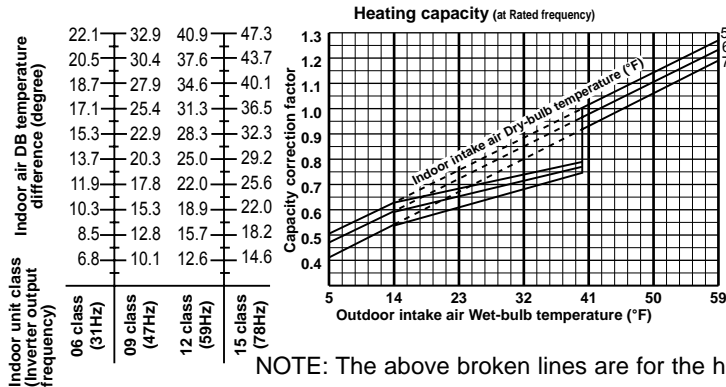
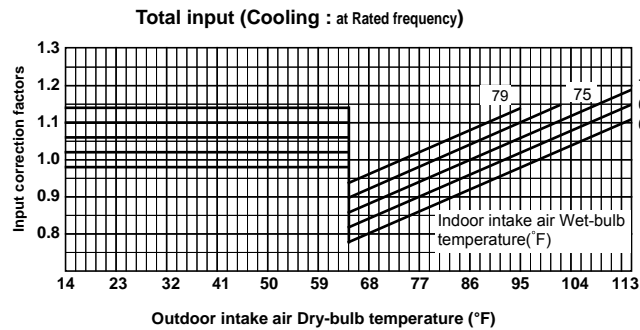
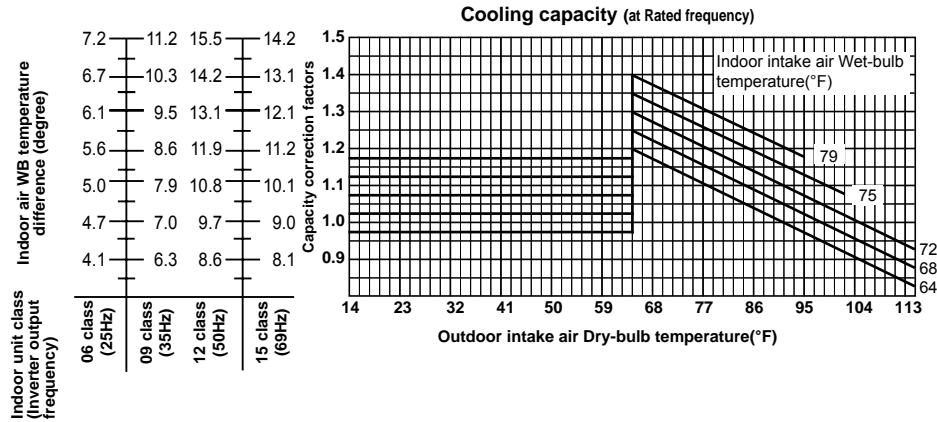
### How to measure the indoor air wet-bulb/dry-bulb temperature difference

1. Attach at least 2 sets of wet and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
2. Attach at least 2 sets of wet and dry-bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
3. Check that the air filter is cleaned.
4. Open windows and doors of room.
5. Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
6. Compressor starts running at 33 Hz (COOL) or 45 Hz (HEAT). The frequency at each operation mode is fixed.
7. When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
8. 10 minutes later, measure temperature again and check that the temperature does not change.



## 8-2. CAPACITY AND THE INPUT CURVES

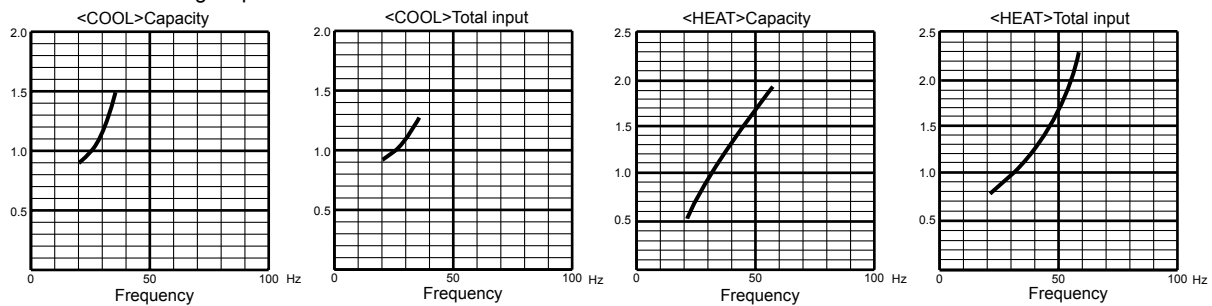
### MXZ-2B20NA MXZ-2B20NA - 1



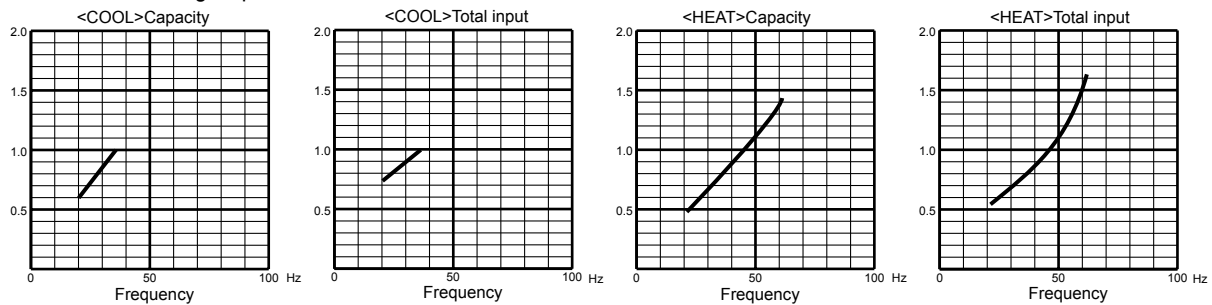
NOTE: The above broken lines are for the heating operation without any frost and defrost operation.

### 8-3. CAPACITY AND INPUT CORRECTION BY MEANS OF INVERTER OUTPUT FREQUENCY (OUTDOOR UNIT: MXZ-2B20NA MXZ-2B20NA -1)

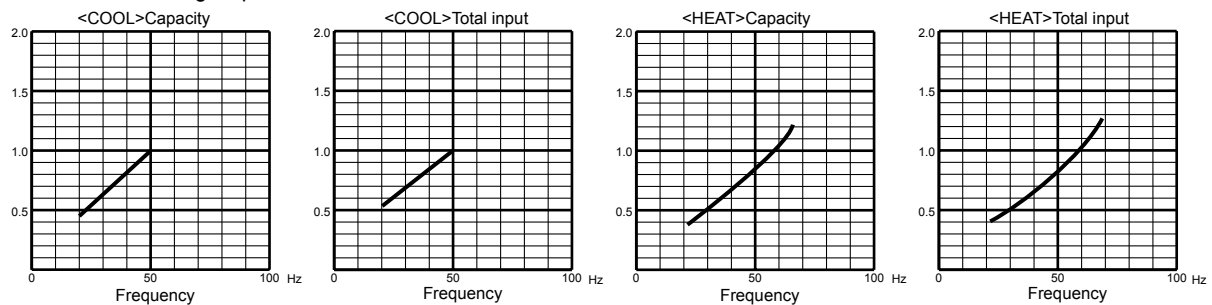
#### 1. 06-class unit in single operation



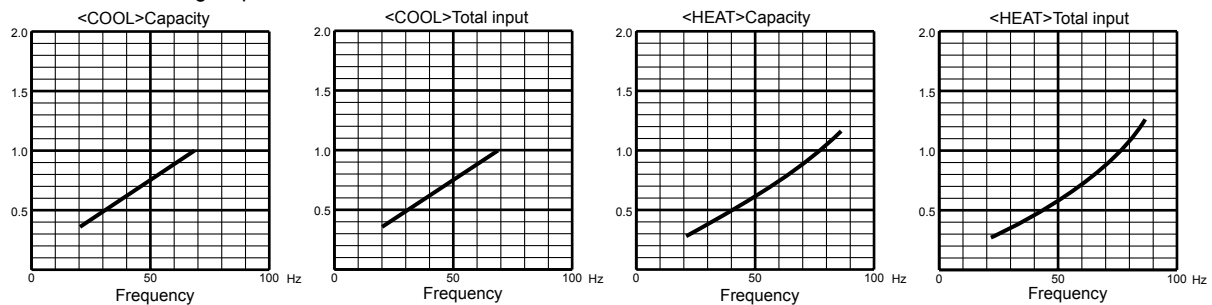
#### 2. 09-class unit in single operation



#### 3. 12-class unit in single operation



#### 4. 15-class unit in single operation



## 8-4. OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

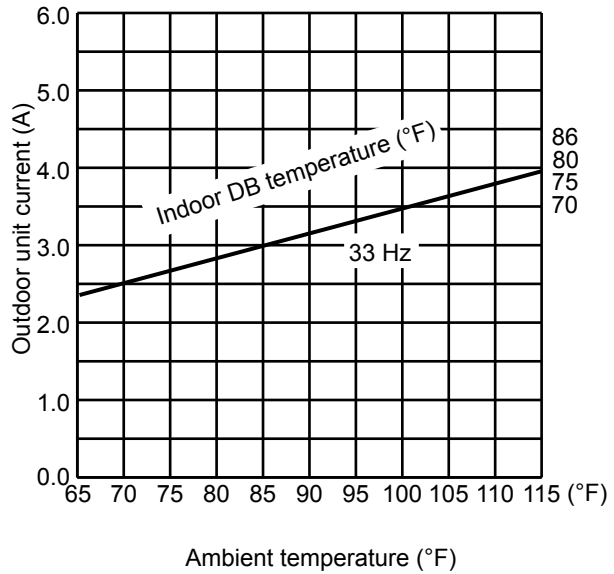
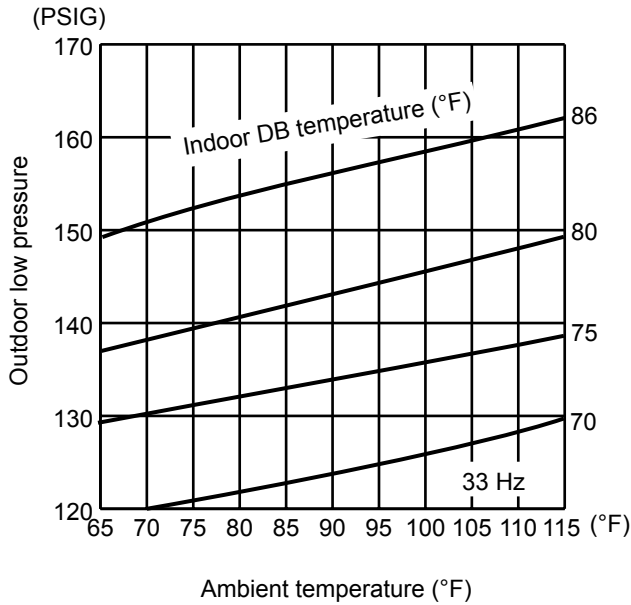
### 1. 09-class unit in single operation (OUTDOOR UNIT: MXZ-2B20NA MXZ-2B20NA -<sup>①</sup>)

#### (1) COOL operation

- ① Data is based on the condition of indoor humidity 50%
- ② Air flow speed: High
- ③ Inverter output frequency: 33 Hz

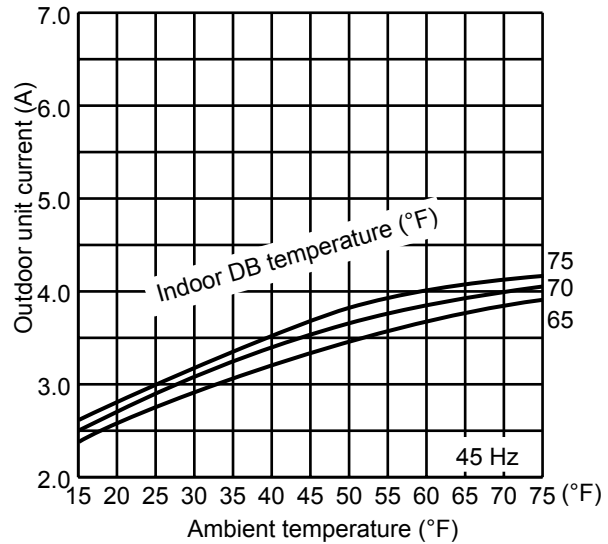
<How to work fixed-frequency operation>

1. Set emergency switch to COOL or HEAT. The switch is located on indoor unit.
2. Press emergency run ON/OFF button.
3. Compressor starts running at 33 Hz (COOL) or 45 Hz (HEAT).
4. Indoor fan runs at High speed and continues for 30 minutes.
5. To cancel this operation, press emergency run ON/OFF button or any button on remote controller.



#### (2) HEAT operation

- ① Data is based on the condition of indoor humidity 75%
- ② Set air flow to High speed.
- ③ Inverter output frequency is 45 Hz.



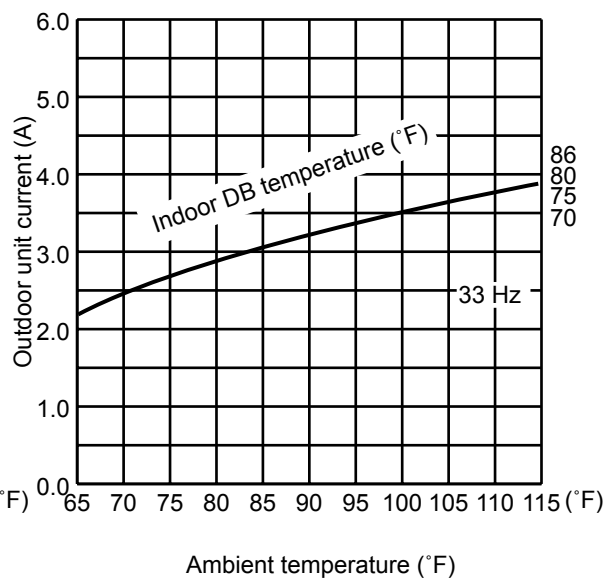
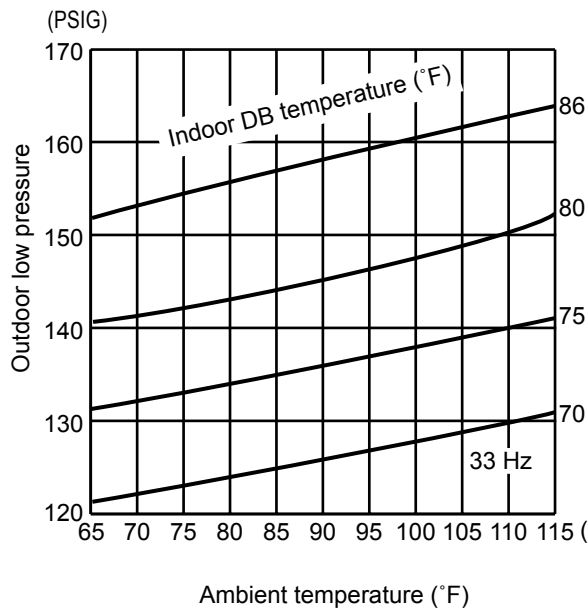
## 2. 12-class unit in single operation (OUTDOOR UNIT: MXZ-2B20NA MXZ-2B20NA -[1])

### (1) COOL operation

- ① Data is based on the condition of indoor humidity 50%
- ② Air flow speed: High
- ③ Inverter output frequency: 33 Hz

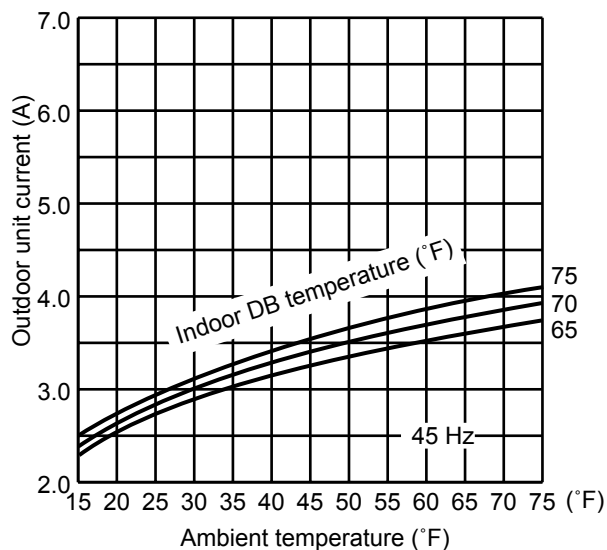
<How to work fixed-frequency operation>

1. Set emergency switch to COOL or HEAT. The switch is located on indoor unit.
2. Press emergency run ON/OFF button.
3. Compressor starts running at 33 Hz (COOL) or 45 Hz (HEAT).
4. Indoor fan runs at High speed and continues for 30 minutes.
5. To cancel this operation, press emergency run ON/OFF button or any button on remote controller.



### (2) HEAT operation

- ① Data is based on the condition of indoor humidity 75%
- ② Set air flow to High speed.
- ③ Inverter output frequency is 45 Hz.



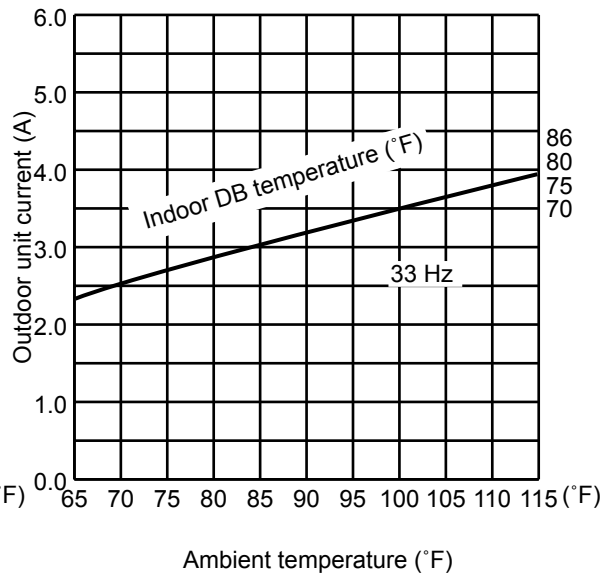
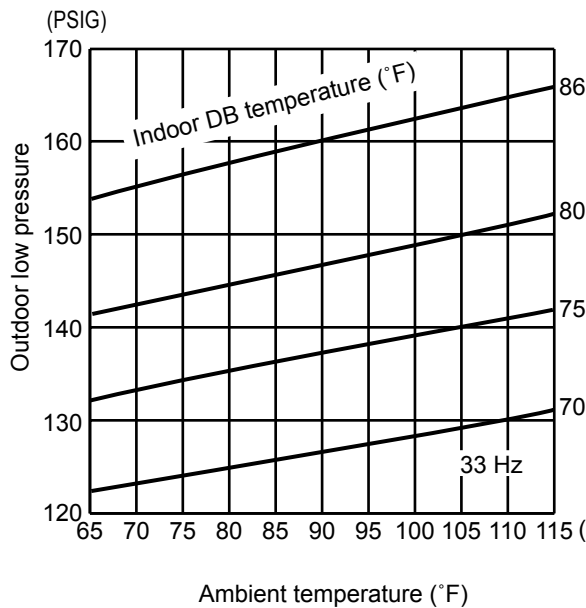
### 3. 15-class unit in single operation (OUTDOOR UNIT: MXZ-2B20NA MXZ-2B20NA -)

#### (1) COOL operation

- ① Data is based on the condition of indoor humidity 50%
- ② Air flow speed: High
- ③ Inverter output frequency: 33 Hz

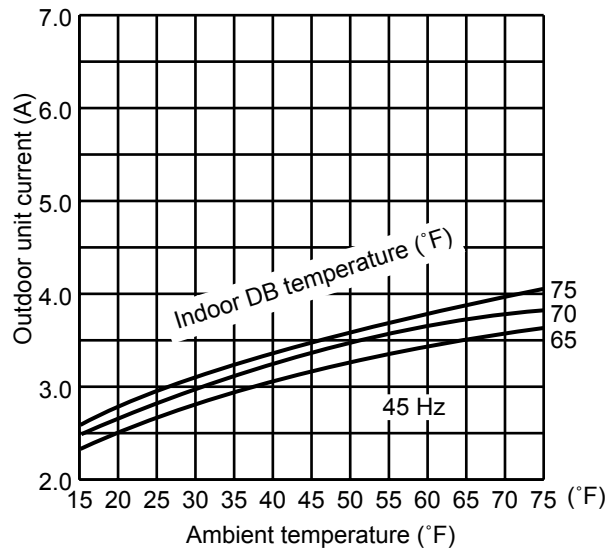
<How to work fixed-frequency operation>

1. Set emergency switch to COOL or HEAT. The switch is located on indoor unit.
2. Press emergency run ON/OFF button.
3. Compressor starts running at 33 Hz (COOL) or 45 Hz (HEAT).
4. Indoor fan runs at High speed and continues for 30 minutes.
5. To cancel this operation, press emergency run ON/OFF button or any button on remote controller.



#### (2) HEAT operation

- ① Data is based on the condition of indoor humidity 75%
- ② Set air flow to High speed.
- ③ Inverter output frequency is 45 Hz.





**MXZ-2B20NA MXZ-2B20NA -<sup>1</sup>****Relation between main sensor and actuator**

Sensor	Purpose	Actuator			
		Compressor	LEV	Outdoor fan motor	4-way valve
Discharge temperature thermistor	Protection	○	○		
Indoor coil thermistor	Defrosting Protection	○	○	○	
Defrost thermistor	Defrosting	○	○	○	○
Fin temperature thermistor	Protection	○		○	
Ambient temperature thermistor	Control	○	○	○	
Outdoor heat exchanger temperature	Protection	○	○	○	
Capacity code	Control	○	○		

**10-1. PRE-HEAT CONTROL**

If moisture gets into the refrigerant cycle, or when refrigerant is liquefied and collected in the compressor, it may interfere the start-up of the compressor.

To improve start-up condition, the compressor is energized even while it is not operating.

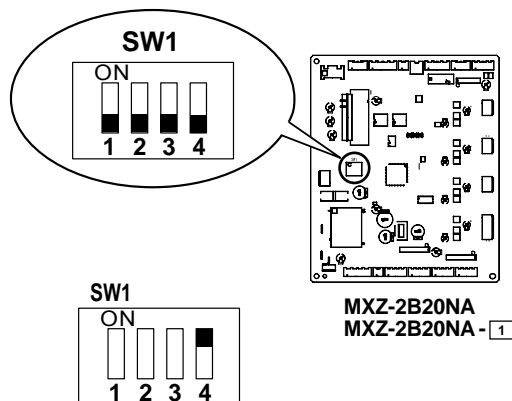
This is to generate heat at the winding.

The compressor uses about 50 W when pre-heat control is turned ON.

Pre-heat control is ON at initial setting.

**[How to deactivate pre-heat control]**

- ① Turn OFF the power supply for the air conditioner before making the setting.
- ② Set the 4th Dip Switch of SW1 on the outdoor electronic control P.C. board to ON to deactivate pre-heat control function.



- ③ Turn ON the power supply for the air conditioner.

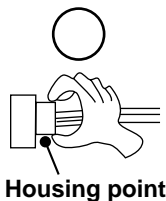
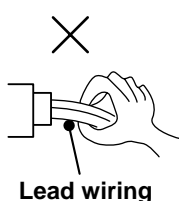
**NOTE:** Pre-heat control will be turned OFF when the breaker is turned OFF.

**MXZ-2B20NA MXZ-2B20NA -<sup>1</sup>****11-1. CAUTIONS ON TROUBLESHOOTING****1. Before troubleshooting, check the following:**

- 1) Check the power supply voltage.
- 2) Check the indoor/outdoor connecting wire for mis-wiring.

**2. Take care of the following during servicing.**

- 1) Before servicing the air conditioner, be sure to turn off the unit first with the remote controller, and then after confirming the horizontal vane is closed, turn off the breaker and/or disconnect the power plug.
- 2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
- 3) When removing the electrical parts, be careful of the residual voltage of smoothing capacitor.
- 4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
- 5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

**3. Troubleshooting procedure**

- 1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
- 2) If the electronic control P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
- 3) When troubleshooting, refer to 11-2, 11-3 and 11-4.

**11-2. FAILURE MODE RECALL FUNCTION**

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (11-4.) disappears, the memorized failure details can be recalled.

This mode is very useful when the unit needs to be repaired for the abnormality which does not recur.

**1. Type of failure mode recall function**

There are 2 types in failure mode recall function as shown below.

**①Indoor and outdoor unit failure mode recall function**

With this function, failure mode of indoor unit and a part of failure mode of outdoor unit can be recalled.

**②The details of outdoor unit failure mode recall function**

With this function, more detailed failure mode of outdoor unit can be recalled.

Refer to the service manual of indoor unit for how to recall the failure mode and the details of indoor unit failure mode.

The outdoor unit failure mode is indicated by the operation indicator lamp on the indoor unit and the LED of outdoor unit.

See "11-2.2. Outdoor unit failure mode table".

## 2. Outdoor unit failure mode table

The left lamp of OPERATION INDICATOR lamp (Indoor unit)	Abnormal point (Failure mode/protection)	LED indication (Outdoor P.C. board)		Condition	Remedy	Indoor/outdoor unit failure mode recall function
		LED 1	LED 2			
OFF	None (Normal)	Lighting	Lighting	—	—	—
2-time flash	Outdoor power system	Lighting	Lighting	When overcurrent protection stop is continuously performed three times within 1 minute after the compressor gets started, or when converter protection stop or bus-bar voltage protection stop is continuously performed three times within 3 minutes after start-up.	<ul style="list-style-type: none"><li>• Check the connection of the compressor connecting wire.</li><li>• Refer to 11-6.⑤ "How to check inverter/compressor".</li><li>• Check the stop valve.</li></ul>	○
3-time flash	Discharge temperature thermistor	Lighting	Once	When thermistor shorts or opens during compressor running.	<ul style="list-style-type: none"><li>• Refer to 11-6.⑥ "Check of outdoor thermistors".</li></ul>	○
	Defrost thermistor	Lighting	Once			
	Ambient temperature thermistor	Lighting	Twice		<ul style="list-style-type: none"><li>• Replace the outdoor electronic control P.C. board.</li><li>• Refer to 11-6.⑥ "Check of outdoor thermistors".</li></ul>	
	Fin temperature thermistor	Lighting	3 times			
	P.C. board temperature thermistor	Lighting	4 times			
	Outdoor heat exchanger temperature thermistor	Lighting	9 times			
4-time flash	Overcurrent	Once	Goes out	When 28A current flows into intelligent power module.	<ul style="list-style-type: none"><li>• Reconnect compressor connector.</li><li>• Refer to 11-6.⑥ "How to check inverter/compressor".</li><li>• Check the stop valve.</li></ul>	—
5-time flash	Discharge temperature	Lighting	Lighting	When discharge temperature exceeds 240.8°F during operation. Compressor can restart if discharge temperature thermistor reads 212°F or less 3 minutes later.	<ul style="list-style-type: none"><li>• Check refrigerant circuit and refrigerant amount.</li><li>• Refer to 11-6.⑦ "Check of LEV".</li></ul>	—
6-time flash	High pressure	Lighting	Lighting	When the outdoor heat exchanger temperature exceeds 158°F during cooling or the indoor gas pipe temperature exceeds 158°F during heating.	<ul style="list-style-type: none"><li>• Check refrigerant circuit and refrigerant amount.</li><li>• Check the stop valve.</li></ul>	—
7-time flash	Fin temperature	3 times	Goes out	When the fin temperature exceeds 188.6°F during operation.	<ul style="list-style-type: none"><li>• Check around outdoor unit.</li><li>• Check outdoor unit air passage.</li><li>• Refer to 11-6.⑧ "Check of outdoor fan motor".</li></ul>	—
	P.C. board temperature	4 times	Goes out	When the P.C. board temperature exceeds 158°F during operation.		
8-time flash	Outdoor fan motor	Lighting	Lighting	When failure occurs continuously three times within 30 seconds after the fan gets started.	<ul style="list-style-type: none"><li>• Refer to 11-6.⑧ "Check of outdoor fan motor".</li></ul>	—
9-time flash	Nonvolatile memory data	Lighting	5 times	When nonvolatile memory data cannot be read properly.	<ul style="list-style-type: none"><li>• Replace the outdoor electronic control P.C. board.</li></ul>	○
10-time flash	Discharge temperature	Lighting	Lighting	When the frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 102.2°F for more than 20 minutes.	<ul style="list-style-type: none"><li>• Check refrigerant circuit and refrigerant amount.</li><li>• Refer to 11-6.⑧ "Check of LEV".</li></ul>	—

**NOTE:** Blinking patterns of this mode differ from the ones of Troubleshooting check table (11-4.).

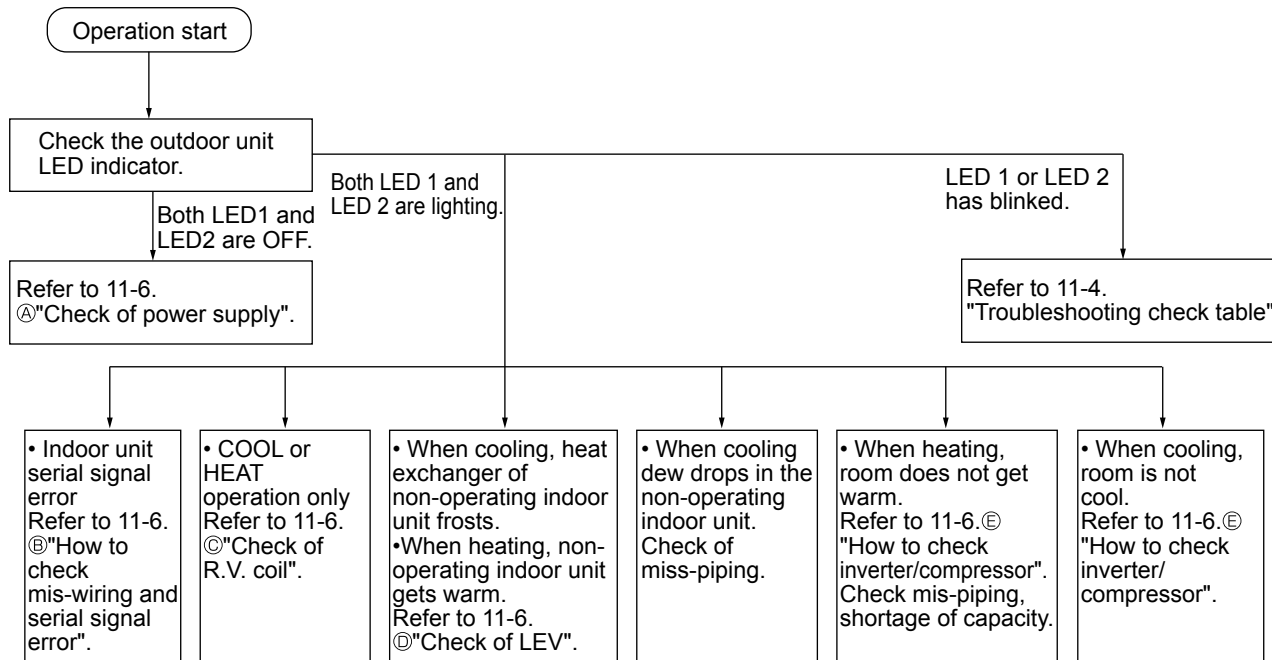
The left lamp of OPERATION INDICATOR lamp (Indoor unit)	Abnormal point (Failure mode/protection)	LED indication (Outdoor P.C. board)		Condition	Remedy	Indoor/outdoor unit failure mode recall function
		LED 1	LED 2			
11-time flash	Communication error between P.C. boards	Lighting	6 times	Communication error occurs between the electronic control P.C. board and power board for more than 10 seconds.	• Check the connecting wire between outdoor electronic control P.C. board and power board.	—
				When the communication between boards protection stop is continuously performed twice.		○
	Current sensor	Lighting	7 times	When a short or open circuit is detected in the current sensor during compressor operating.	• Replace the power board.	—
				Current sensor protection stop is continuously performed twice.		○
	Zero cross detecting circuit	5 times	Goes out	When zero cross signal cannot be detected while the compressor is operating.	• Check the connecting wire among electronic control P.C. board, noise filter P.C. board and power board.	—
				The protection stop of the zero cross detecting circuit is continuously performed 10 times.		○
	Converter	5 times	Goes out	When a failure is detected in the operation of the converter during operation.	• Check the voltage of power supply. • Replace the power board.	—
	Bus-bar voltage (1)	5 times	Goes out	When the bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating.		
	Bus-bar voltage (2) *Even if this protection stop is performed continuously three times, it does not mean the abnormality in outdoor power system.	6 times	Goes out	When the bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.	• Check the voltage of power supply. • Replace the outdoor electronic control P.C. board.	○
15-time flash	LEV for drain	Lighting	Lighting	When the indoor unit detects any abnormal in the LEV for drain.	• Refer to 11-6.④ "Check of LEV". • Check the drain pump of the indoor unit.	—

**NOTE:** Blinking patterns of this mode differ from the ones of Troubleshooting check table (11-4.).

### 11-3. INSTRUCTION OF TROUBLESHOOTING

- Check the indoor unit with referring to the indoor unit service manual, and confirm that there is any problem in the indoor unit.

Then, check the outdoor unit with referring to this page.



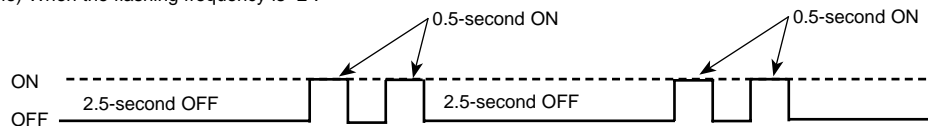
## 11-4. TROUBLESHOOTING CHECK TABLE

No.	Symptom	Indication		Abnormal point / Condition	Condition	Remedy
		LED1(Red)	LED2(Yellow)			
1	Outdoor unit does not operate.	Lighting	Once	LEV for drain	When the indoor unit detects any abnormality in the LEV for drain.	<ul style="list-style-type: none"> <li>Refer to 11-6. ⑩ "Check of LEV".</li> <li>Check the drain pump of the indoor unit.</li> </ul>
2		Lighting	Twice	Outdoor power system	When over current protection stop is continuously performed three times within 1 minute after the compressor gets started, or when converter protection stop or bus-bar voltage protection stop is continuously performed three times within 3 minutes after start-up.	<ul style="list-style-type: none"> <li>Check the connection of the compressor wire.</li> <li>Refer to 11-6. ⑩ "How to check inverter/compressor".</li> <li>Check the stop valve.</li> </ul>
3		Lighting	3 times	Discharge temperature thermistor	When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 10 minutes of compressor start-up.	<ul style="list-style-type: none"> <li>Refer to 11-6. ⑩ "Check of outdoor thermistors".</li> </ul>
4		Lighting	4 times	Fin temperature thermistor P.C. board temperature thermistor	When a short or open circuit is detected in the thermistor during operation.	<ul style="list-style-type: none"> <li>Refer to 11-6. ⑩ "Check of outdoor thermistors".</li> <li>Replace the outdoor electronic control P.C. board.</li> </ul>
5		Lighting	5 times	Ambient temperature thermistor Outdoor heat exchanger temperature thermistor Defrost thermistor	When a short or open circuit is detected in the thermistor during operation. When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 5 minutes (in cooling) and 10 minutes (in heating) of compressor start-up. When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 5 minutes of compressor start-up.	<ul style="list-style-type: none"> <li>Refer to 11-6. ⑩ "Check of outdoor thermistors".</li> </ul>
6		Lighting	7 times	Nonvolatile memory data	When the nonvolatile memory data cannot be read properly.	<ul style="list-style-type: none"> <li>Replace the outdoor electronic control P.C. board.</li> </ul>
7		Lighting	8 times	Current sensor	Current sensor protection stop is continuously performed twice.	<ul style="list-style-type: none"> <li>Replace the power board.</li> </ul>
8		Lighting	11 times	Communication error between P.C. boards	When the communication protection stop between boards is continuously performed twice.	<ul style="list-style-type: none"> <li>Check the connecting wire between outdoor electronic control P.C. board and power board.</li> </ul>
9		Lighting	12 times	Zero cross detecting circuit	The protection stop of the zero cross detecting circuit is continuously performed 10 times.	<ul style="list-style-type: none"> <li>Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board.</li> </ul>
10		Twice	Goes out	IPM protection Lock protection	When overcurrent is detected after 30 minutes of compressor start-up. When overcurrent is detected within 30 minutes of compressor start-up.	<ul style="list-style-type: none"> <li>Reconnect compressor connector.</li> <li>Refer to 11-6. ⑩ "How to check inverter/compressor".</li> <li>Check the stop valve.</li> <li>Check the power module (PAM module).</li> </ul>
11		3 times	Goes out	Discharge temperature protection	When discharge temperature exceeds 240.8°F during operation. Compressor can restart if discharge temperature thermistor reads 212°F or less 3 minutes later.	<ul style="list-style-type: none"> <li>Check the amount of gas and refrigerant circuit.</li> <li>Refer to 11-6. ⑩ "Check of LEV".</li> </ul>
12		4 times	Goes out	Fin temperature protection P.C. board temperature protection	When the fin temperature exceeds 188.6°F during operation. When the P.C. board temperature exceeds 158°F during operation.	<ul style="list-style-type: none"> <li>Check refrigerant circuit and refrigerant amount.</li> <li>Refer to 11-6. ⑩ "Check of outdoor fan motor".</li> </ul>
13		5 times	Goes out	High-pressure protection	When the outdoor heat exchanger temperature exceeds 158°F during cooling or when indoor gas pipe temperature exceeds 158°F during heating.	<ul style="list-style-type: none"> <li>Check amount of gas and the refrigerant circuit.</li> <li>Check of stop valve.</li> </ul>
14		8 times	Goes out	Converter protection	When a failure is detected in the operation of the converter during operation.	<ul style="list-style-type: none"> <li>Replace the power board.</li> </ul>
15		9 times	Goes out	Bus-bar voltage protection (1) Bus-bar voltage protection (2)	When the bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating. When the bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.	<ul style="list-style-type: none"> <li>Check the voltage of power supply.</li> <li>Replace the power board or the outdoor electronic control P.C. board.</li> <li>Refer to 11-6. ⑩ "Check of bus-bar voltage".</li> </ul>
16		13 times	Goes out	Outdoor fan motor	When failure occurs continuously three times within 30 seconds after the fan gets started.	<ul style="list-style-type: none"> <li>Refer to 11-6. ⑩ "Check of outdoor fan motor".</li> </ul>
17		Lighting	8 times	Current sensor protection	When a short or open circuit is detected in the current sensor during compressor operating.	<ul style="list-style-type: none"> <li>Replace the power board.</li> </ul>
18		Lighting	11 times	Communication between P.C. boards protection	Communication error occurs between the outdoor electronic control P.C. board and power board for more than 10 seconds.	<ul style="list-style-type: none"> <li>Check the connecting wire between outdoor electronic control P.C. board and power board.</li> </ul>
19		Lighting	12 times	Zero cross detecting circuit protection	When zero cross signal cannot be detected while the compressor is operating.	<ul style="list-style-type: none"> <li>Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board.</li> </ul>

NOTE 1. The location of LED is illustrated at the right figure. Refer to 11-7.1.

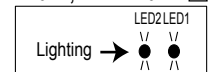
2. LED is lighted during normal operation.

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.  
(Example) When the flashing frequency is "2".



Outdoor electronic control P.C. board (Parts side)

MXZ-2B20NA, MXZ-2B20NA-1





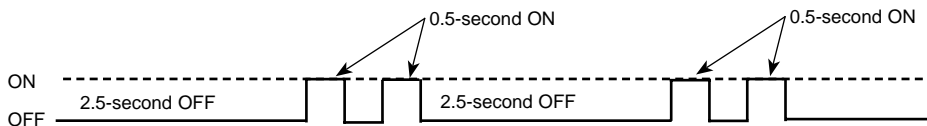
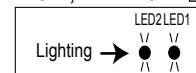
No.	Symptom	Indication		Abnormal point / Condition	Condition	Remedy
		LED1(Red)	LED2(Yellow)			
21	Outdoor unit operates.	Once	Lighting	Primary current protection	When the input current exceeds 15A.	These symptoms do not mean any abnormality of the product, but check the following points. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.
				Secondary current protection	When the current of the compressor exceeds 15A.	
22		Twice	Lighting	High-pressure protection	When the indoor gas pipe temperature exceeds 113°F during heating.	
				Defrosting in cooling	When the indoor gas pipe temperature falls 37.4°F or below during cooling.	
23		3 times	Lighting	Discharge temperature protection	When the frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 122°F(COOL mode) /104°F(HEAT mode) for more than 40 minutes.	• Check refrigerant circuit and refrigerant amount. • Refer t1 11-6.④ "Check of LEV". • Refer to 11-6.⑤ "Check of outdoor thermistors".
24		4 times	Lighting	Low discharge temperature protection	When the frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 102.2°F for more than 20 minutes.	• Refer to 11-6.④ "Check of LEV". • Check refrigerant circuit and refrigerant amount.
25		5 times	Lighting	Cooling high-pressure protection	When the outdoor heat exchanger temperature exceeds 136.4°F during operation.	This symptom does not mean any abnormality of the product, but check the following points. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.
26	Outdoor unit operates normally.	9 times	Lighting	Inverter check mode	When the unit is operated with emergency operation switch.	—
27		Lighting	Lighting	Normal	—	—

NOTE 1. The location of LED is illustrated at the right figure. Refer to 11-7.1.  
2. LED is lighted during normal operation.

Outdoor electronic control P.C. board(Parts side)

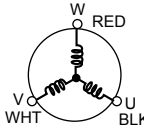
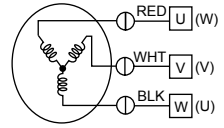
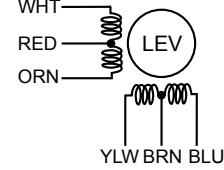
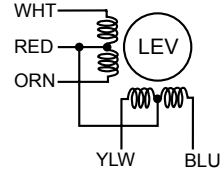
MXZ-2B20NA, MXZ-2B20NA- ①

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.  
(Example) When the flashing frequency is "2".



## 11-5. TROUBLE CRITERION OF MAIN PARTS

### MXZ-2B20NA MXZ-2B20NA - [1]

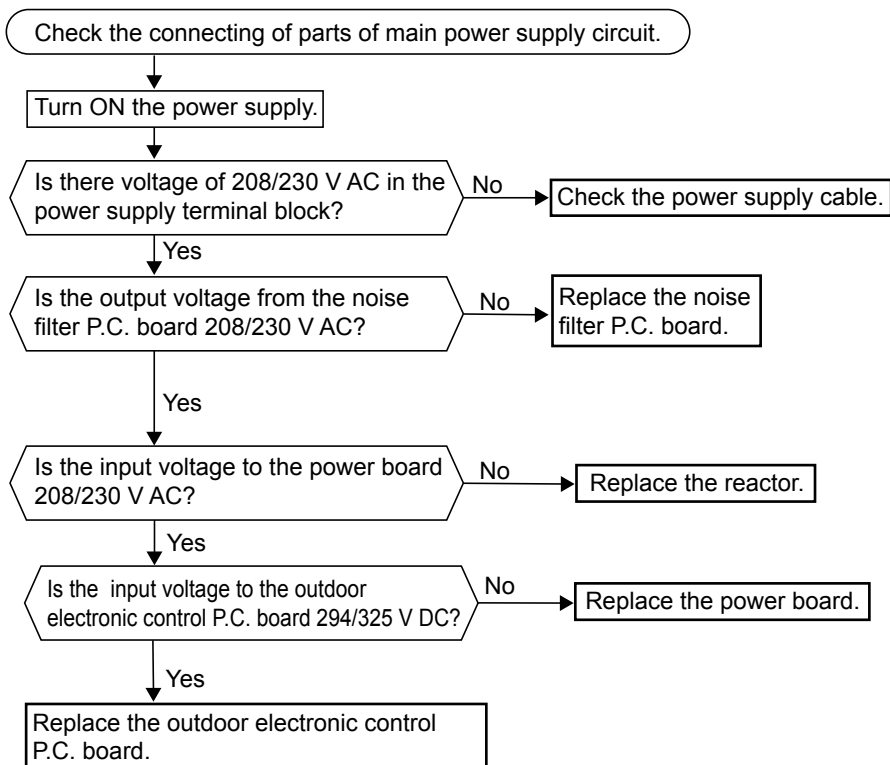
Part name	Check method and criterion														
Defrost thermistor (RT61) Fin temperature thermistor (RT64) Ambient temperature thermistor (RT65) Outdoor heat exchanger temperature thermistor (RT68)	Measure the resistance with a tester.  Refer to 11-7. "Test point diagram and voltage",1. "Outdoor electronic control P.C. board", or 3. "Outdoor power board", for the chart of thermistor.														
Discharge temperature thermistor (RT62)	Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up. Refer to 11-7. "Test point diagram and voltage",1. "Outdoor electronic control P.C. board", for the chart of thermistor.														
Compressor 	Measure the resistance between terminals using a tester. (Winding temperature: 14°F ~ 104°F) <table><tr><td colspan="2">Normal (Each phase)</td></tr><tr><td colspan="2">0.86 Ω ~ 1.06 Ω</td></tr></table>	Normal (Each phase)		0.86 Ω ~ 1.06 Ω											
Normal (Each phase)															
0.86 Ω ~ 1.06 Ω															
Outdoor fan motor 	Measure the resistance between lead wires using a tester. (Part temperature: 14°F ~ 104°F) <table><tr><td colspan="2">Normal (Each phase)</td></tr><tr><td><b>MXZ-2B20NA</b></td><td><b>MXZ-2B20NA - 1</b></td></tr><tr><td>13.4 Ω ~ 16.4 Ω</td><td>13 Ω ~ 16 Ω</td></tr></table>	Normal (Each phase)		<b>MXZ-2B20NA</b>	<b>MXZ-2B20NA - 1</b>	13.4 Ω ~ 16.4 Ω	13 Ω ~ 16 Ω								
Normal (Each phase)															
<b>MXZ-2B20NA</b>	<b>MXZ-2B20NA - 1</b>														
13.4 Ω ~ 16.4 Ω	13 Ω ~ 16 Ω														
R.V. coil	Measure the resistance using a tester. (Part temperature: 14°F ~ 104°F) <table><tr><td>Normal</td></tr><tr><td>1.2 kΩ ~ 1.56 kΩ</td></tr></table>	Normal	1.2 kΩ ~ 1.56 kΩ												
Normal															
1.2 kΩ ~ 1.56 kΩ															
Linear expansion valve <b>MXZ-2B20NA</b>  <b>MXZ-2B20NA - 1</b> 	Measure the resistance using a tester. (Part temperature: 14°F ~ 104°F) <table><tr><td colspan="2">Color of lead wire</td><td rowspan="2">Normal</td></tr><tr><td><b>MXZ-2B20NA</b></td><td><b>MXZ-2B20NA - 1</b></td></tr><tr><td>WHT - RED</td><td>WHT - RED</td><td rowspan="4">37.4 Ω ~ 53.9 Ω</td></tr><tr><td>RED - ORN</td><td>RED - ORN</td></tr><tr><td>YLW - BRN</td><td>YLW - RED</td></tr><tr><td>BRN - BLU</td><td>RED - BLU</td></tr></table>	Color of lead wire		Normal	<b>MXZ-2B20NA</b>	<b>MXZ-2B20NA - 1</b>	WHT - RED	WHT - RED	37.4 Ω ~ 53.9 Ω	RED - ORN	RED - ORN	YLW - BRN	YLW - RED	BRN - BLU	RED - BLU
Color of lead wire		Normal													
<b>MXZ-2B20NA</b>	<b>MXZ-2B20NA - 1</b>														
WHT - RED	WHT - RED	37.4 Ω ~ 53.9 Ω													
RED - ORN	RED - ORN														
YLW - BRN	YLW - RED														
BRN - BLU	RED - BLU														

## 11-6. TROUBLESHOOTING FLOW

### MXZ-2B20NA MXZ-2B20NA - 1

Outdoor unit does not operate.

#### Ⓐ Check of power supply





- When unit cannot operate neither by the remote controller nor by EMERGENCY OPERATION switch.  
Indoor unit does not operate.
- When OPERATION INDICATOR lamp flashes ON and OFF in every 0.5-second.  
Outdoor unit does not operate.

## ② How to check mis-wiring and serial signal error

### LED indication for communication status

Communication status is indicated by the LED.

Unit status

Blinking: normal communication  
Lighting: abnormal communication or not connected

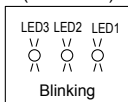
Pattern 1 and 2 is repeatedly displayed alternately. Each pattern is displayed for 15 seconds.

**NOTE:** "Lighting" in the table below does not indicate abnormal communication.

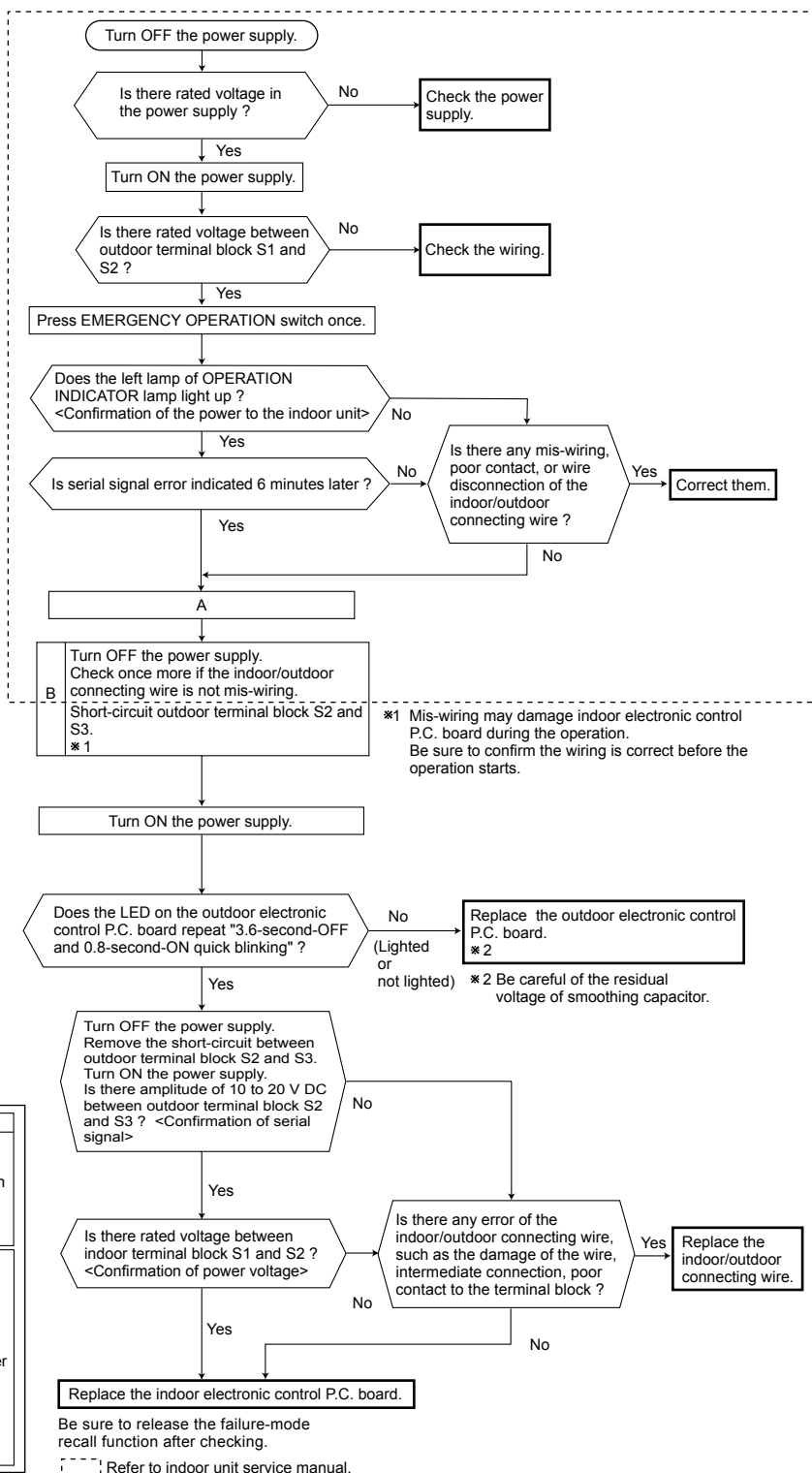
### MXZ-2B20NA

#### MXZ-2B20NA - ①

Outdoor electronic control P.C. board (Parts side)



Pattern	LED 3	LED 2	LED 1
1	Lighting	Unit B status	Unit A status
2	Goes out	Lighting	Unit C status



**The cooling operation or heating operation does not operate.**

**© Check of R.V. coil**

CN912	Noise filter P.C. board
CN781	Outdoor electronic control P.C. board

**• When heating operation does not work.**

1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION in HEAT mode.

Is there voltage of 208/230 V AC between pin1 and pin 2 at connector CN912 ?

Yes

Turn OFF the power supply of indoor and outdoor unit.

Disconnect the connector CN912. Is there normal resistance to R.V. coil ? (Refer to 11-5.)

No

Replace the R.V. coil.

Yes

Replace the 4-way valve.

1. Turn OFF the power supply of indoor and outdoor unit, and disconnect the connector CN781.
2. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION in HEAT mode.

Is there voltage of 12 V DC between the connector CN781 pin 5 (+) and pin 3 (-) ?

No

Replace the outdoor electronic control P.C. board.

Yes

Replace the power P.C. board or the noise filter P.C. board.

**• When cooling operation does not work.**

1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION in COOL mode.

Is there voltage of 208/230 V AC between pin1 and pin 2 at connector CN912 ? \*

No

Replace the 4-way valve.

Yes

\* If the connector CN912 is not connected or R.V. coil is open, voltage occurs between terminals even when the control is OFF.

1. Turn OFF the power supply of the indoor and the outdoor unit, and disconnect the connector CN781.
2. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION in COOL mode.

Is there voltage of 12 V DC between the connector CN781 pin 5 (+) and pin 3 (-) ?

No

Replace the noise filter P.C. board.

Yes

Replace the outdoor electronic control P.C. board.

- When cooling, heat exchanger of non-operating indoor unit frosts.
- When heating, non-operating indoor unit get warm.

#### ① Check of LEV

Turn ON the power supply to the outdoor unit after checking LEV coil is mounted to the LEV body securely.

Is "click - click" sound heard ?  
Or, do you feel vibration of LEV coil with your hand ?

Yes

Normal

No

Disconnect the connectors.  
CN791: LEV A, CN792: LEV B, CN795: LEV E  
Is there normal resistance to LEV coil ?  
(Refer to 11-5.)

Yes

Replace the outdoor electronic control P.C. board.

No

Replace LEV coil.

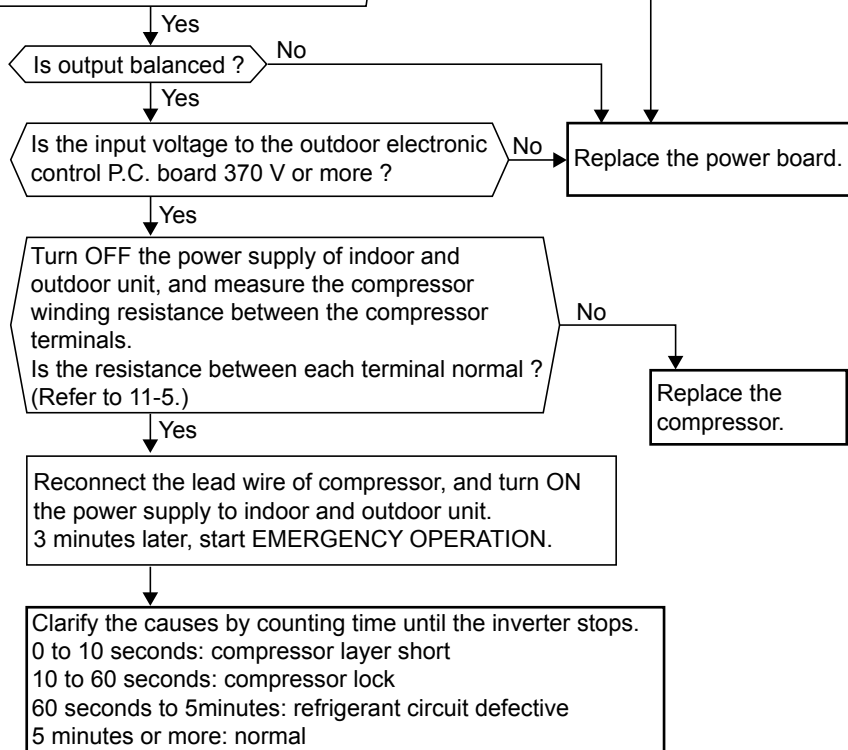
- When heating, room does not get warm.
- When cooling, room does not get cool.

### ⑤ How to check inverter/compressor

Disconnect the terminal of the compressor. 3 minutes after turning ON the power supply, start EMERGENCY OPERATION.

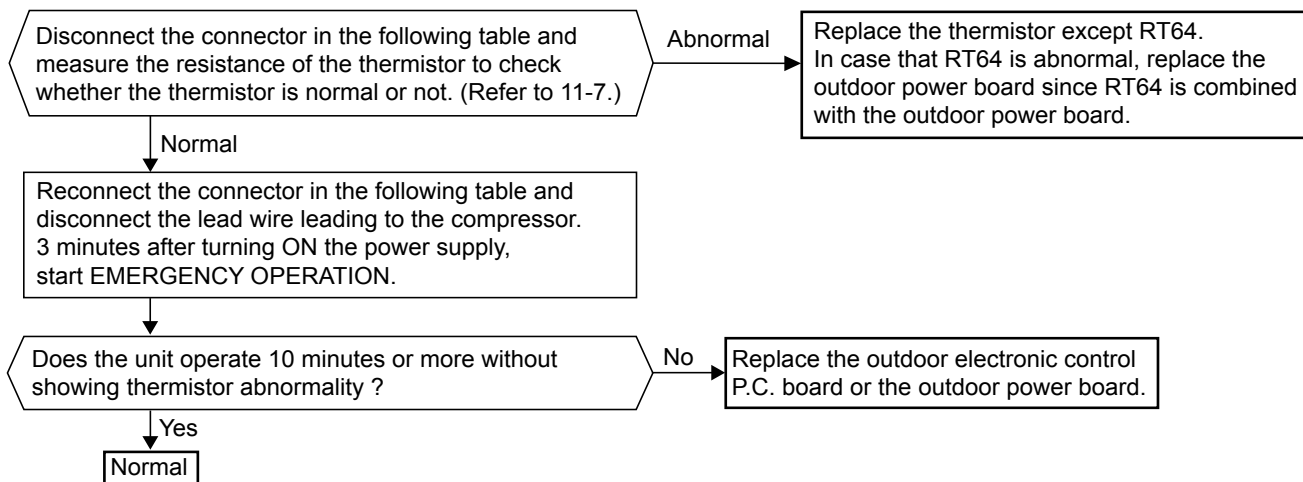
Measure the voltage between each lead wire leading to the compressor.  
 U (BLK) - V (WHT)  
 V (WHT) - W (RED)  
 W (RED) - U (BLK)  
 Output voltage: 50V-250V  
 Is proper output voltage detected?  
 ※1, ※2

- ※1 • After the outdoor fan starts running, wait for 1 minute or more before measuring the voltage.  
 • The output voltage values have the tolerance of  $\pm 20\%$ .  
 ※2 • The output differs depending on the capacity or the number of indoor units to be operated.



• When thermistor is abnormal.

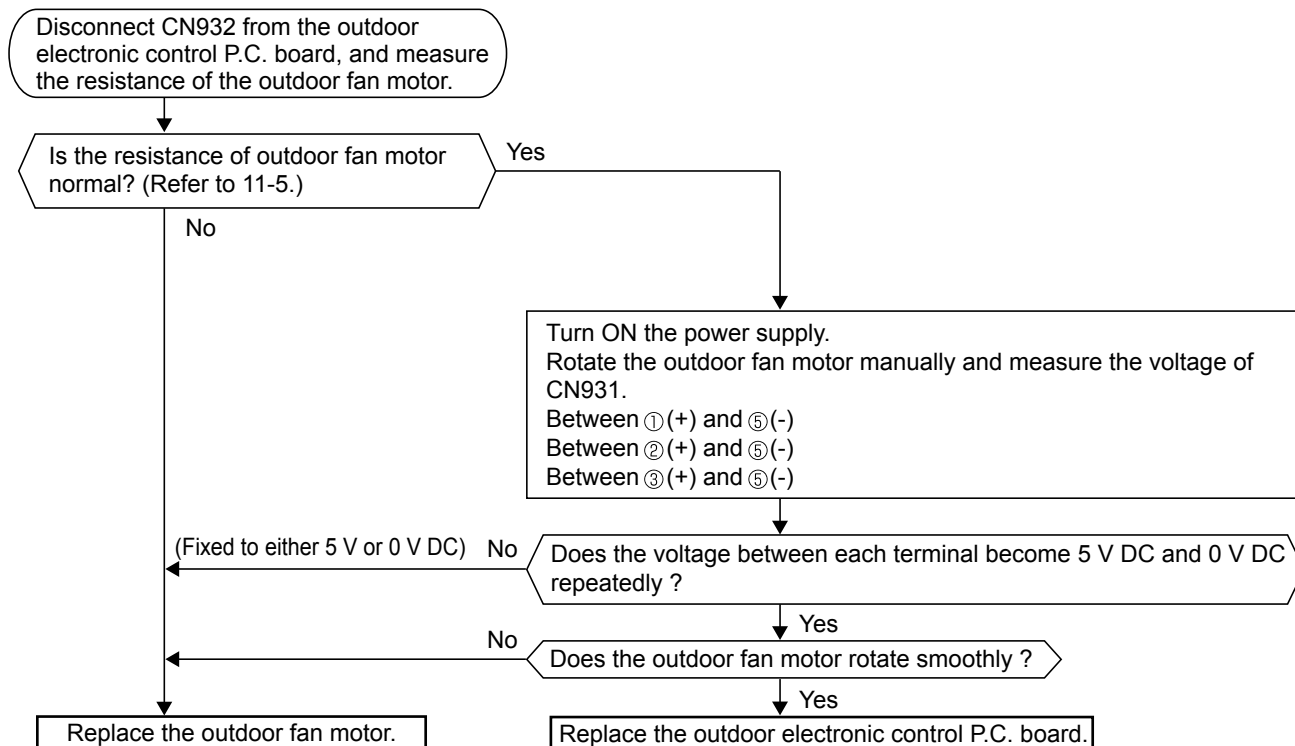
⑥ Check of outdoor thermistors



Thermistor	Symbol	Connector, Pin No.	Board
Defrost	RT61	Between CN661 pin1 and pin2	Outdoor electronic control P.C. board
Discharge temperature	RT62	Between CN661 pin3 and pin4	
Outdoor heat exchanger temperature	RT68	Between CN661 pin7 and pin8	
Ambient temperature	RT65	Between CN663 pin1 and pin2	
Fin temperature	RT64	Between CN3 pin1 and pin2	Outdoor power board

• Fan motor does not operate or stops operating shortly after starting the operation.

⑦ Check of outdoor fan motor



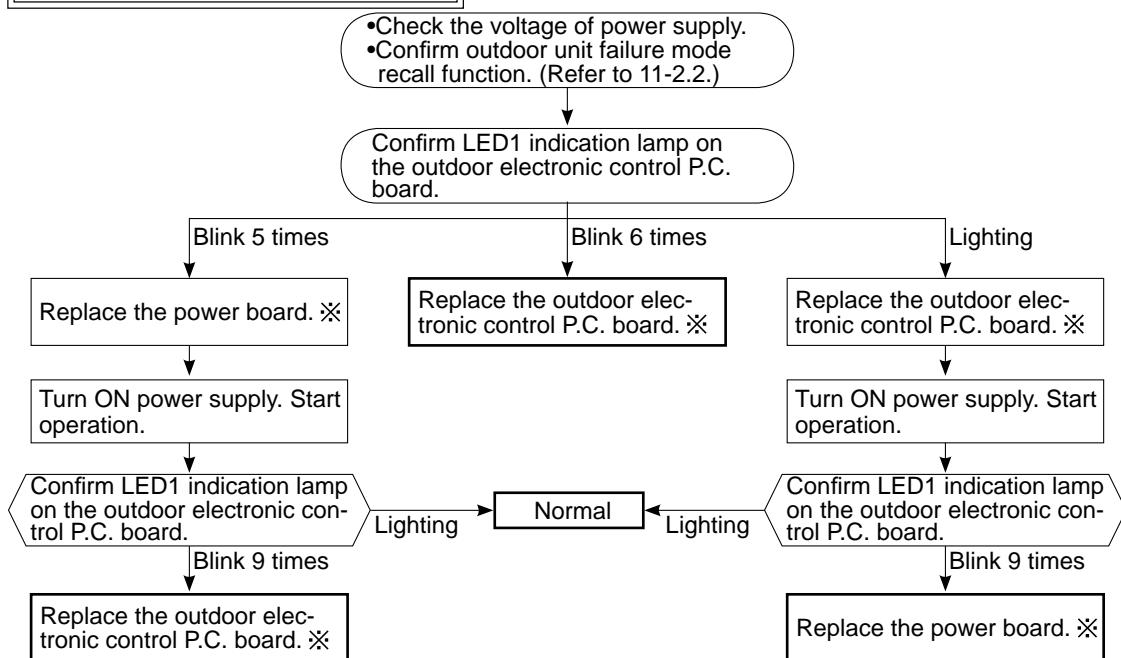
- When the operation frequency does not go up from the lowest frequency.

### ⊕ The other cases

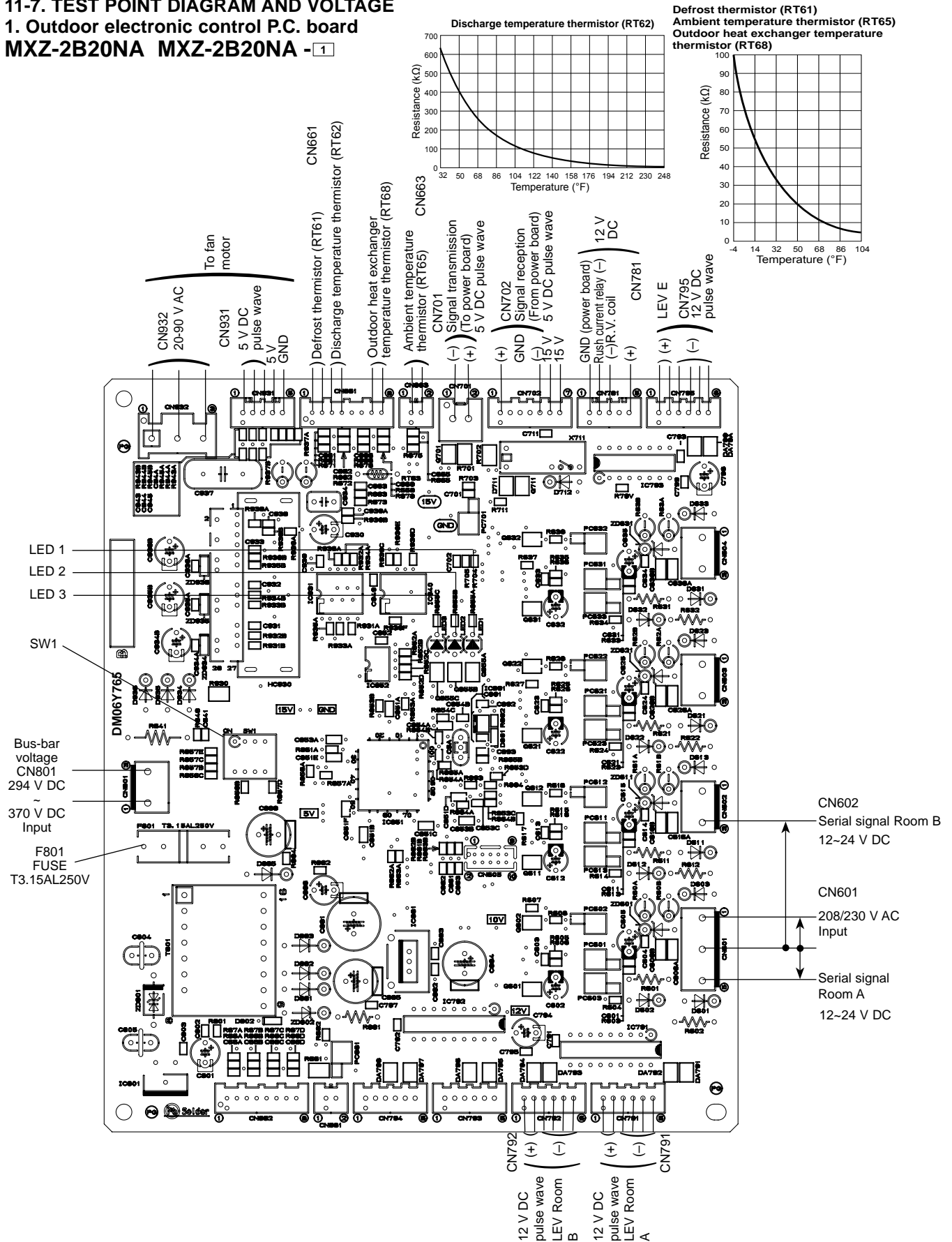
Indoor unit does not operate. (different operating models in multi system)

- When you try to run two indoor units simultaneously, one for cooling and the other for heating, the unit which transmits signal to the outdoor units first decides the operation mode.
- When the above situation occurs, set all the indoor units to the same mode, turn OFF the indoor units, and then turn them back ON.
- Though the top of the indoor unit sometimes gets warm, this does not mean malfunction. The reason is that the refrigerant gas continuously flows into the indoor unit even while it is not operating.

### ① Check of bus-bar voltage



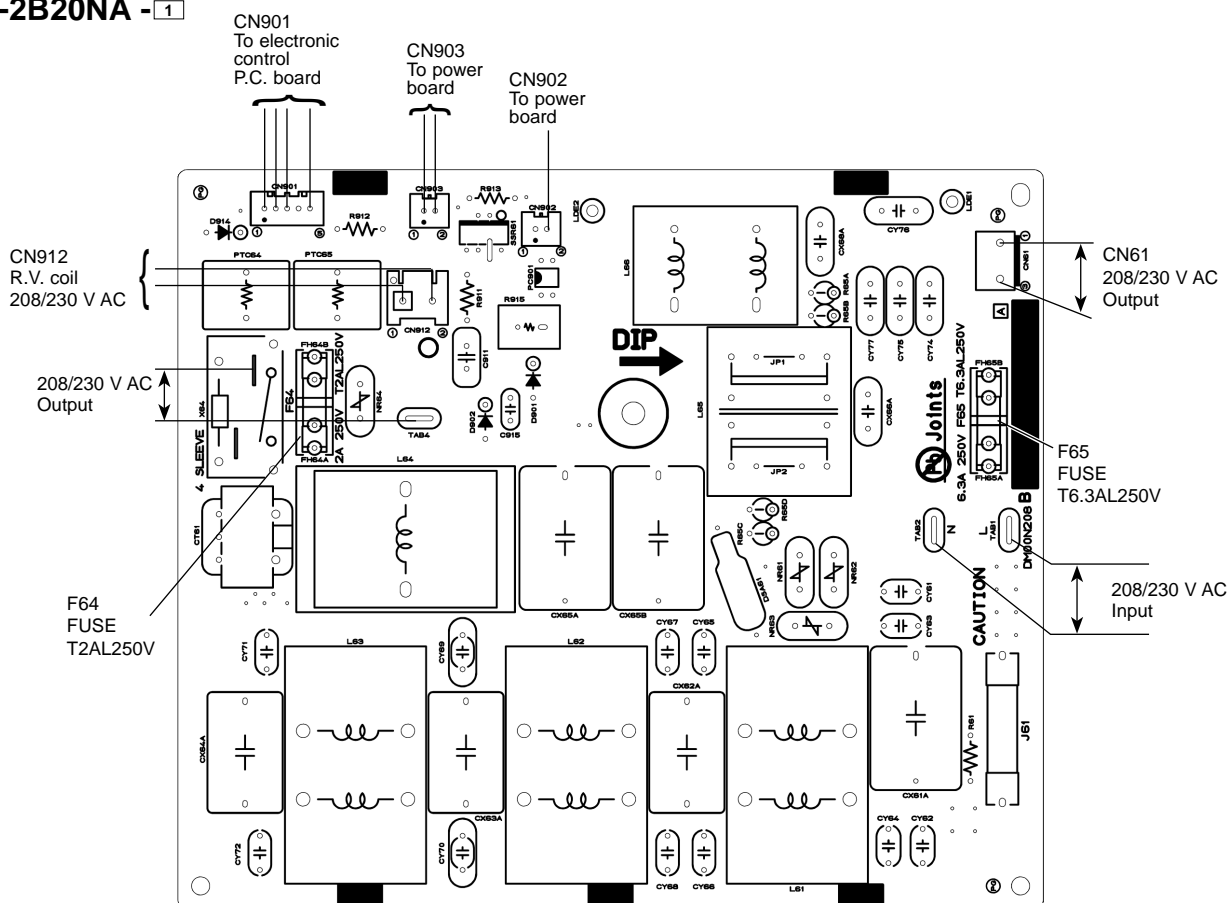
# 11-7. TEST POINT DIAGRAM AND VOLTAGE 1. Outdoor electronic control P.C. board MXZ-2B20NA MXZ-2B20NA - 1



## 2. Noise filter P.C. board

**MXZ-2B20NA**

**MXZ-2B20NA - 1**



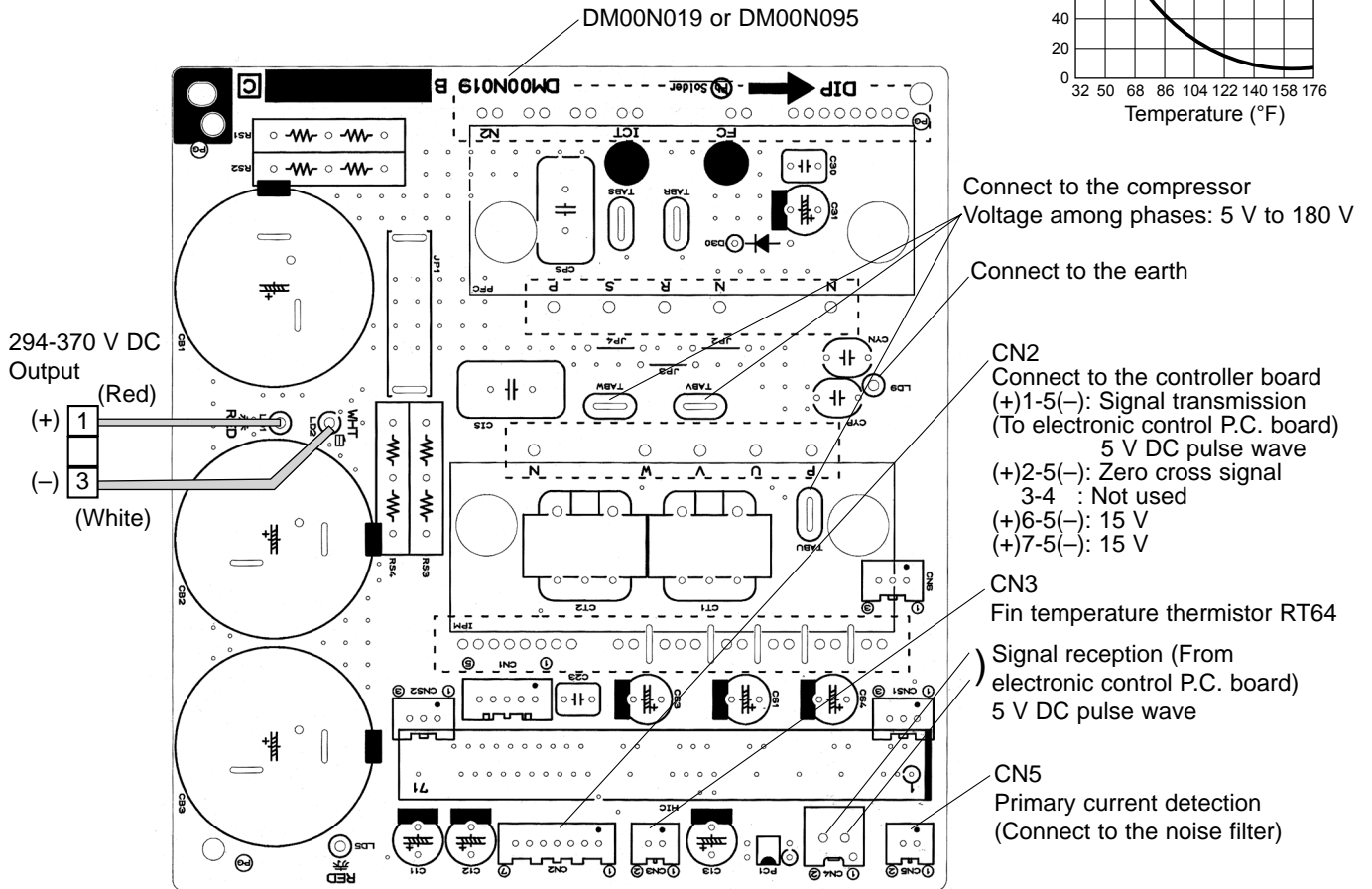
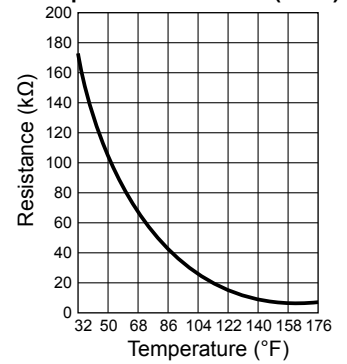


### 3. Outdoor Power board

MXZ-2B20NA

MXZ-2B20NA - 1

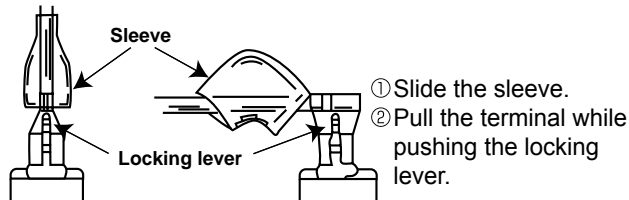
Fin temperature thermistor (RT64)



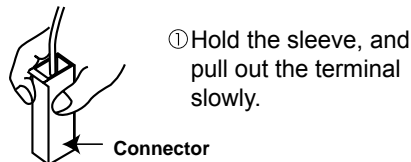
## &lt;"Terminal with locking mechanism" Detaching points&gt;

The terminal which has the locking mechanism can be detached as shown below.  
There are two types ( Refer to (1) and (2) ) of the terminal with locking mechanism.  
The terminal without locking mechanism can be detached by pulling it out.  
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.

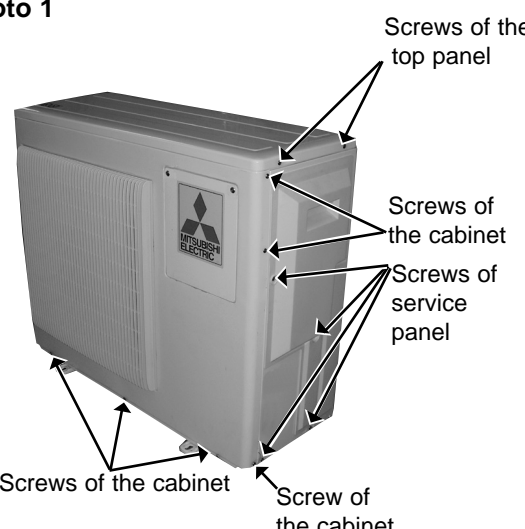
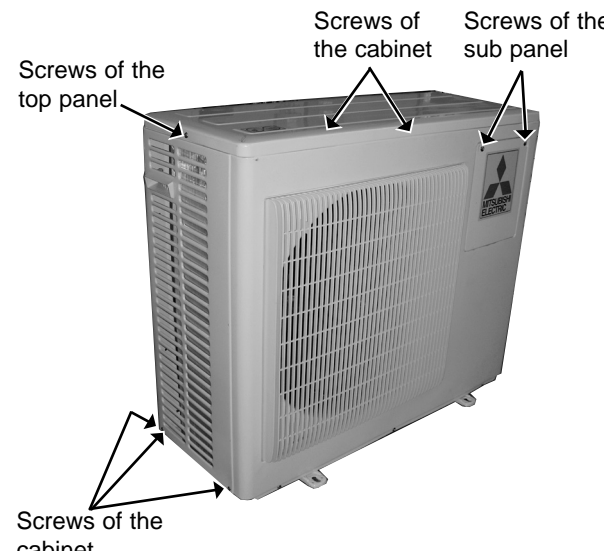


(2) The terminal with this connector has the locking mechanism.



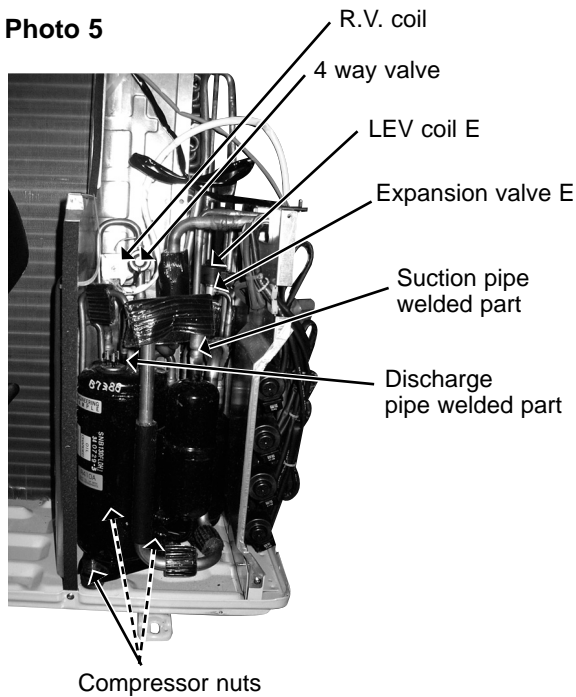
## 12-1. MXZ-2B20NA MXZ-2B20NA - 1

## OUTDOOR UNIT

OPERATING PROCEDURE	PHOTOS
<p><b>1. Removing the compressor</b></p> <p>(1) Remove the screws of the top panel, and remove the top panel.</p> <p>(2) Remove the screws of the service panel, and remove the service panel.</p> <p>(3) Recover gas from the refrigerant circuit.</p> <p><b>NOTE:</b> Recover gas from the pipes until the pressure gauge shows 0 PSIG.</p> <p>(4) Remove the screws of the cabinet, and remove the cabinet.</p> <p>(5) Remove the screws of the back panel, and remove the back panel (Photo 3).</p> <p>(6) Disconnect the compressor lead wire from terminal of the compressor (U, V, W).</p> <p>(7) Disconnect the outdoor electronic control P.C. board connectors: CN661, CN663, CN791, CN792, CN795, CN931, CN932 Disconnect the noise filter P.C. board connector: CN912</p> <p>(8) Remove the screws of the electrical parts, and remove the electrical parts (Photo 4).</p> <p>(9) Remove the propeller.</p> <p>(10) Remove the screws of the separator, and remove the separator (Photo 6).</p> <p>(11) Remove the sound proof felt (Photo 6).</p> <p>(12) Detach the welded parts of the compressor suction and discharge pipes (Photo 5).</p> <p>(13) Remove the compressor nuts and remove the compressor.</p>	<p><b>Photo 1</b></p>  <p><b>Photo 2</b></p> 
<p><b>2. Removing the electronic control P.C. board</b></p> <p>(1) Remove the screws of the sub panel.</p> <p>(2) Remove the sub panel.</p> <p>(3) Disconnect all connectors and lead wires on the electronic control P.C. board.</p> <p>(4) Remove the electronic control P.C. board.</p>	

## OPERATING PROCEDURE

**Photo 5**

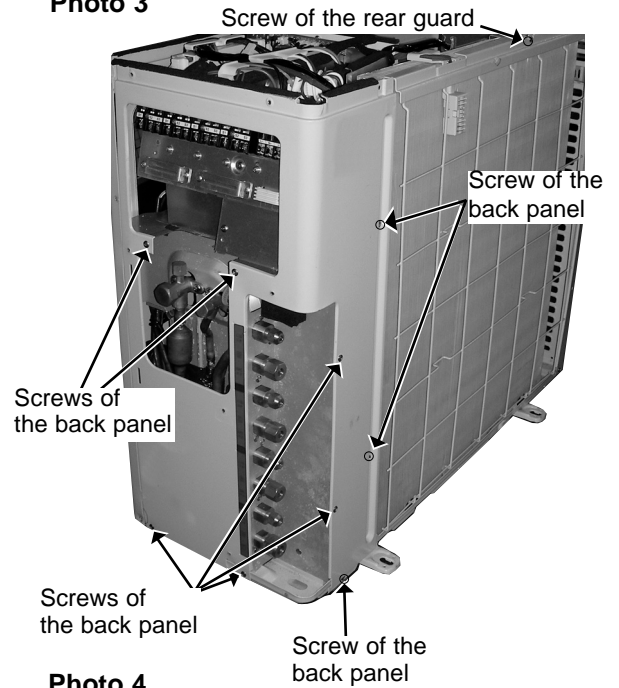


### 3. Removing the fan motor

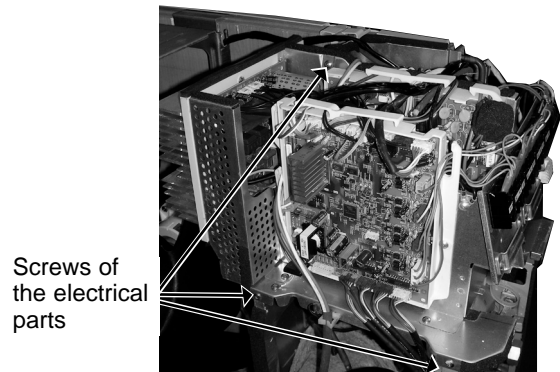
- (1) Remove the top panel, the service panel, and the cabinet (Photo 1, 2).
- (2) Disconnect the connector CN931 and CN932 on the outdoor electronic control P.C. board.
- (3) Remove the propeller.
- (4) Remove the fan motor.

## PHOTOS

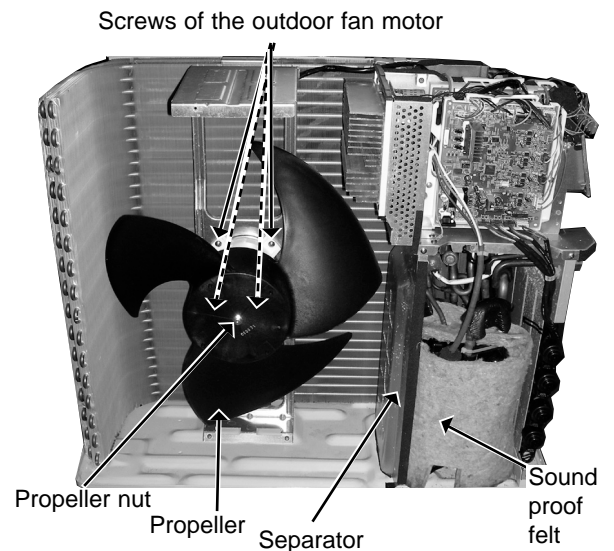
**Photo 3**



**Photo 4**



**Photo 6**



## OPERATING PROCEDURE

### 4. Removing the 4-way valve

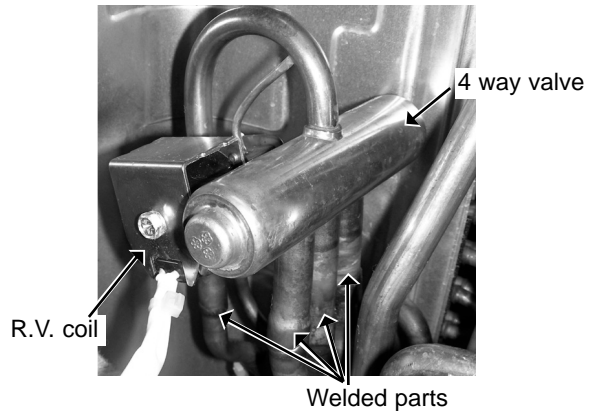
- (1) Remove the top panel (Photo 1).
- (2) Remove the service panel, the cabinet, and the back panel (Photo 1, 2, 3).
- (3) Recover gas from the refrigerant circuit.

**NOTE:** Recover gas from the pipes until the pressure gauge shows 0 PSIG.

- (4) Remove the electrical parts (Photo 4).
- (5) Detach the welded parts of 4-way valve and pipe (Photo 7).

## PHOTOS

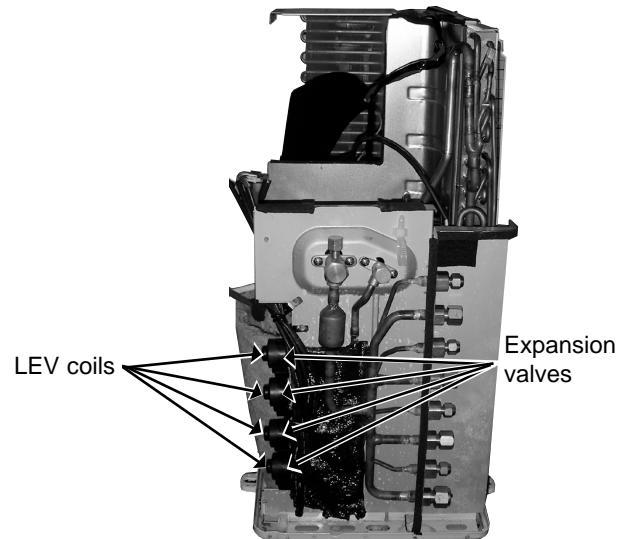
Photo 7



### 5. Removing the expansion valve

- (1) Remove the top panel (Photo 1).
- (2) Remove the service panel, the cabinet, and the back panel (Photo 1, 2, 3).  
(Gas recovery is not required if the unit is pumped down.)
- (3) Remove the electrical parts for removing LEV E (Photo 4, 5).
- (4) Remove the LEV coils.
- (5) Detach the welded parts of expansion valves and pipes.

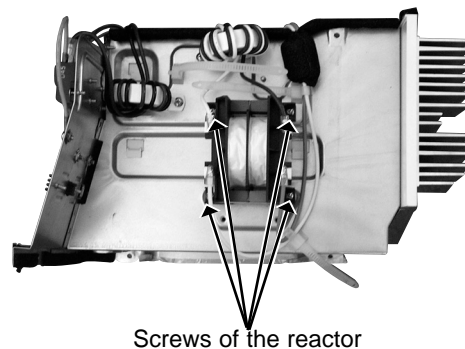
Photo 8



### 6. Removing the reactor

- (1) Remove the top panel (Photo 1).
- (2) Remove the service panel, cabinet, back panel, and the electrical parts (Photo 1, 2, 3, 4).
- (3) Disconnect the reactor lead wire from the terminal of the reactor.
- (4) Remove the screws of the reactor, and remove the reactor (Photo 9).

Photo 9







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# MXZ-2B20NA MXZ-2B20NA -1 Cooling

Indoor units combination	Indoor type		Cooling capacity(BTU/h)			Power consumption (W)	Current(A)		P/F(%)
	A	B	Unit A	Unit B	Total		208V	230V	
06	Wall		6000		6000 ( 5400 - 9000 )	530 ( 490 - 680 )	2.68	2.43	95
09	Wall		9000		9000 ( 5400 - 9000 )	680 ( 490 - 680 )	3.44	3.11	95
	Duct		9000		9000 ( 5400 - 9000 )	750 ( 510 - 750 )	3.80	3.43	95
12	Wall		12000		12000 ( 5400 - 12000 )	930 ( 490 - 930 )	4.71	4.26	95
	Duct		12000		12000 ( 5400 - 12000 )	1010 ( 510 - 1010 )	5.11	4.62	95
15	Wall		15000		15000 ( 5400 - 15000 )	1330 ( 490 - 1330 )	6.73	6.09	95
	Duct		15000		15000 ( 5400 - 15000 )	1560 ( 510 - 1560 )	7.89	7.14	95
06+06	Wall	Wall	6000	6000	12000 ( 7800 - 15000 )	800 ( 630 - 1820 )	3.97	3.59	97
06+09	Wall	Wall	6000	9000	15000 ( 7800 - 18000 )	1050 ( 630 - 1820 )	5.20	4.71	97
	Wall	Duct	6000	9000	15000 ( 7800 - 16500 )	1150 ( 650 - 1800 )	5.70	5.15	97
06+12	Wall	Wall	6000	12000	18000 ( 7800 - 20000 )	1440 ( 630 - 1820 )	7.14	6.45	97
	Wall	Duct	6000	12000	18000 ( 7800 - 19000 )	1610 ( 650 - 1800 )	7.98	7.22	97
06+15	Wall	Wall	5800	14200	20000 ( 7800 - 23000 )	1660 ( 630 - 2230 )	8.23	7.44	97
	Wall	Duct	5800	14200	20000 ( 7800 - 21500 )	1930 ( 650 - 2210 )	9.57	8.65	97
09+09	Wall	Wall	9000	9000	18000 ( 7800 - 20000 )	1440 ( 630 - 1820 )	7.14	6.45	97
	Wall	Duct	9000	9000	18000 ( 7800 - 19000 )	1610 ( 650 - 1800 )	7.98	7.22	97
	Duct	Duct	9000	9000	18000 ( 7800 - 18000 )	1780 ( 670 - 1780 )	8.82	7.98	97
09+12	Wall	Wall	8500	11500	20000 ( 7800 - 23000 )	1660 ( 630 - 2230 )	8.23	7.44	97
	Wall	Duct	8500	11500	20000 ( 7800 - 21500 )	1930 ( 650 - 2210 )	9.57	8.65	97
	Duct	Wall	8500	11500	20000 ( 7800 - 21500 )	1930 ( 650 - 2210 )	9.57	8.65	97
	Duct	Duct	8500	11500	20000 ( 7800 - 20000 )	2190 ( 670 - 2190 )	10.85	9.82	97
09+15	Wall	Wall	7500	12500	20000 ( 7800 - 23000 )	1660 ( 630 - 2230 )	8.23	7.44	97
	Wall	Duct	7500	12500	20000 ( 7800 - 21500 )	1930 ( 650 - 2210 )	9.57	8.65	97
	Duct	Wall	7500	12500	20000 ( 7800 - 21500 )	1930 ( 650 - 2210 )	9.57	8.65	97
	Duct	Duct	7500	12500	20000 ( 7800 - 20000 )	2190 ( 670 - 2190 )	10.85	9.82	97
12+12	Wall	Wall	10000	10000	20000 ( 7800 - 23000 )	1630 ( 630 - 2230 )	8.08	7.31	97
	Wall	Duct	10000	10000	20000 ( 7800 - 21500 )	1910 ( 650 - 2210 )	9.47	8.56	97
	Duct	Duct	10000	10000	20000 ( 7800 - 20000 )	2190 ( 670 - 2190 )	10.85	9.82	97

**MXZ-2B20NA MXZ-2B20NA - 1 Heating**

Indoor units combination	Indoor type		Heating capacity(BTU/h)			Power consumption (W)	Current(A)		P/F(%)
	A	B	Unit A	Unit B	Total		208V	230V	
06	Wall		7400		7400 ( 5200 - 14400 )	610 ( 480 - 1400 )	3.09	2.79	95
09	Wall		11000		11000 ( 5200 - 15400 )	880 ( 480 - 1430 )	4.45	4.03	95
	Duct		10900		10900 ( 5200 - 15400 )	940 ( 480 - 1430 )	4.76	4.30	95
12	Wall		13600		13600 ( 5200 - 16400 )	1150 ( 480 - 1460 )	5.82	5.26	95
	Duct		13600		13600 ( 5200 - 16400 )	1180 ( 480 - 1460 )	5.97	5.40	95
15	Wall		18000		18000 ( 5200 - 21100 )	1650 ( 480 - 2100 )	8.35	7.55	95
	Duct		18000		18000 ( 5200 - 21100 )	1720 ( 480 - 2100 )	8.70	7.87	95
06+06	Wall	Wall	7400	7400	14800 ( 8500 - 25500 )	960 ( 520 - 2410 )	4.76	4.30	97
06+09	Wall	Wall	7400	11000	18400 ( 8500 - 25500 )	1270 ( 520 - 2410 )	6.29	5.69	97
	Wall	Duct	7400	10900	18300 ( 8500 - 25500 )	1400 ( 520 - 2520 )	6.94	6.28	97
06+12	Wall	Wall	7400	13600	21000 ( 8500 - 25500 )	1520 ( 520 - 2410 )	7.53	6.81	97
	Wall	Duct	7400	13600	21000 ( 8500 - 25500 )	1590 ( 520 - 2520 )	7.88	7.13	97
06+15	Wall	Wall	6400	15600	22000 ( 8500 - 25500 )	1650 ( 520 - 2410 )	8.18	7.40	97
	Wall	Duct	6400	15600	22000 ( 8500 - 25500 )	1720 ( 520 - 2520 )	8.52	7.71	97
09+09	Wall	Wall	11000	11000	22000 ( 8500 - 25500 )	1650 ( 520 - 2410 )	8.18	7.40	97
	Wall	Duct	11000	10900	21900 ( 8500 - 25500 )	1740 ( 520 - 2520 )	8.62	7.80	97
	Duct	Duct	10900	10900	21800 ( 8500 - 25500 )	1820 ( 520 - 2620 )	9.02	8.16	97
09+12	Wall	Wall	9500	12500	22000 ( 8500 - 25500 )	1650 ( 520 - 2410 )	8.18	7.40	97
	Wall	Duct	9500	12500	22000 ( 8500 - 25500 )	1720 ( 520 - 2520 )	8.52	7.71	97
	Duct	Wall	9500	12500	22000 ( 8500 - 25500 )	1720 ( 520 - 2520 )	8.52	7.71	97
	Duct	Duct	9500	12500	22000 ( 8500 - 25500 )	1780 ( 520 - 2620 )	8.82	7.98	97
09+15	Wall	Wall	8250	13750	22000 ( 8500 - 25500 )	1650 ( 520 - 2410 )	8.18	7.40	97
	Wall	Duct	8250	13750	22000 ( 8500 - 25500 )	1720 ( 520 - 2520 )	8.52	7.71	97
	Duct	Wall	8250	13750	22000 ( 8500 - 25500 )	1720 ( 520 - 2520 )	8.52	7.71	97
	Duct	Duct	8250	13750	22000 ( 8500 - 25500 )	1780 ( 520 - 2620 )	8.82	7.98	97
12+12	Wall	Wall	11000	11000	22000 ( 8500 - 25500 )	1650 ( 520 - 2410 )	8.18	7.40	97
	Wall	Duct	11000	11000	22000 ( 8500 - 25500 )	1720 ( 520 - 2520 )	8.52	7.71	97
	Duct	Duct	11000	11000	22000 ( 8500 - 25500 )	1780 ( 520 - 2620 )	8.82	7.98	97